DNA-TR-85-13-AP-B

# INTEGRATED BATTLEFIELD EFFECTS RESEARCH FOR THE NATIONAL TRAINING CENTER

## Appendix B--Requirements Design Specification for the Addition of Nuclear and Chemical Capabilities to the National Training Center (NTC) Core Instrumentation Subsystem (CIS)

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19 ABSTRACT (Continue on reverse if necessary and identify by block number)

Research performed to evaluate and develop enhancements for integrated battlefield training at the U.S. Army National Training Center is described. These enhancements had been identified and concepts developed for their application in earlier phases of this research. The report consists of the basic volume summarizing the research tasks, approach, results, conclusions, and recommendations; plus twelve appendices which provide details on the nine major tasks into which the research was divided. Research performed and the associated appendices are as follows:

Development of nuclear and chemical environmental and effects software:

Analysis of nuclear algorithms — Appendix A

Requirements specification for nuclear and chemical model algorithms at the NTC — Appendix B

Chemical model algorithm description — Appendix C

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11. TITLE (Continued)

Capabilities to the National Training Center (NTC) Core Instrumentation Subsystem (CIS)

19. ABSTRACT (Continued)

Demonstration of the system for combining live and notional battalions for training higher level staffs in integrated battlefield (IB) command and control:

| | |
|---|---|
| Functional requirements analysis for IB command and control simulation | Appendix D |
| Report on the demonstration | Appendix E |

Analysis and design of field simulators for nuclear and chemical warfare:

| | |
|---|---|
| Technical and operational impacts of field simulators | Appendix F |
| Capability of off-the-shelf paging system to communicate at Ft. Irwin | Appendix G |
| Designs of field simulators | Appendix H |

Adaptation of nuclear and chemical software to other Army training models:

| | |
|---|---|
| Feasibility of transferring ARTBASS Code from Perkin-Elmer to VAX | Appendix I |
| Division/Corps training simulation functional analysis | Appendix J |
| ARTBASS conversion to VAX | Appendix K |
| Requirements specification for adding nuclear and chemical models to ARTBASS | Appendix L |

This research provided the following products:

Software which models nuclear and chemical environment and effects with appropriate fidelity and timing for training and which is ready for installation on NTC computers.

A demonstrated capability for combining actions of real battalions with computer simulated notional battalions for training brigade/division commanders and staffs.

An analysis of the impacts of using field simulators at the NTC for nuclear and chemical warfare training, and the designs of the selected simulators (i.e., common control system, radiacmeters, dosimeters, chemical detectors).

Analysis of the application of nuclear and chemical models to other Army battalion training models; conversion of the ARTBASS model to operate on the VAX 11/780; incorporation of the nuclear and chemical models into ARTBASS; and demonstration of the nuclear and chemical models using ARTBASS.

# CONVERSION FACTORS FOR U.S. CUSTOMARY TO METRIC (SI) UNITS OF MEASUREMENT

| To Convert From | To | Multiply By |
|---|---|---|
| angstrom | Meters (m) | 1.000 000 x E -10 |
| atmosphere (normal) | Kilo pascal (kPa) | 1.013 25 X E +2 |
| bar | kilo pascal (kPa) | 1.000 000 X E +2 |
| barn | meter$^2$ ($m^2$) | 1.000 000 X E -28 |
| British thermal unit (thermochemical) | joule (J) | 1.054 350 X E +3 |
| cal (thermochemical)/cm$^2$ | mega joule/m$^2$ ($MJ/m^2$) | 4.184 000 X E -2 |
| calorie (thermochemical) | joule (J) | 4.184 000 |
| calorie (thermochemical)/g | joule per kilogram (J/kg)* | 4.184 000 X E +3 |
| curie | giga becquerel (Gbq) † | 3.700 000 X E +1 |
| degree Celsius | degree kelvin (K) | $t_c = t°_C + 273.15$ |
| degree (angle) | radian (rad) | 1.745 329 X E -2 |
| degree Farenheit | degree kelvin (K) | $t_c = (t°_F + 459.67)/1.8$ |
| electron volt | joule (J) | 1.602 19 X E -19 |
| erg | joule (J) | 1.000 000 X E -7 |
| erg/second | watt (W) | 1.000 000 X E -7 |
| foot | meter (m) | 3.048 000 X E -1 |
| foot-pound-force | joule (J) | 1.355 818 |
| gallon (U.S. liquid) | meter$^3$ ($m^3$) | 3.785 412 X E -3 |
| inch | meter (m) | 2.540 000 X E -2 |
| jerk | joule (J) | 1.000 000 X E +9 |
| joule kilogram (J/kg) (radiation dose absorbed) | gray (Gy)* | 1.000 000 |
| kilotons | terajoules | 4.183 |
| kip (1000 lbf) | newton (N) | 4.448 222 X E +3 |
| kip/inch$^2$ (ksi) | kilo pascal (kPa) | 6.894 757 X E +3 |
| ktap | newton-second/m$^2$ ($N-s/m^2$) | 1.000 000 X E +2 |
| micron | meter (m) | 1.000 000 X E -6 |
| mil | meter (m) | 2.540 000 X E -5 |
| mile (international) | meter (m) | 1.609 344 X E +3 |
| ounce | kilogram (kg) | 2.834 952 X E -2 |
| pound-force (lbf avoirdupois) | newton (N) | 4.448 222 |
| pound-force inch | newton-meter (N·m) | 1.129 848 X E -1 |
| pound-force/inch | newton/meter (N/m) | 1.751 268 X E +2 |
| pound-force/foot$^2$ | kilo pascal (kPa) | 4.788 026 X E -2 |
| pound-force/inch$^2$ (psi) | kilo pascal (kPa) | 6.894 757 |
| pound-mass (lbm avoirdupois) | kilogram (kg) | 4.535 924 X E -1 |
| pound-mass-foot$^2$ (moment of inertia) | kilogram-meter$^2$ ($kg·m^2$) | 4.214 011 X E -2 |
| pound-mass/foot$^3$ | kilogram-meter$^3$ ($kg/m^3$) | 1.601 846 X E +1 |
| rad (radiation dose absorbed | gray (Gy)* | 1.000 000 X E -2 |
| roentgen | coulomb/kilogram (C/kg) | 2.579 760 X E -4 |
| shake | second (s) | 1.000 000 X E -8 |
| slug | kilogram (kg) | 1.459 390 X E +1 |
| torr (mm Hg, 0° C) | kilo pascal (kPa) | 1.333 22 X E -1 |

*The gray (Gy) is the accepted SI unit equivalent to the energy imparted by ionizing radiation to a mass and corresponds to one joule/kilogram.

†The becquerel (Bq) is the SI unit of radioactivity; 1 Bq = 1 event/s.

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# SECTION 1
# INTRODUCTION

## 1.1 General

The use or threatened use of chemical and tactical nuclear weapons will profoundly impact modern tactical warfare. U.S. forces must be able to conduct successful operations in widely varying situations, including operations in which nuclear, biological and chemical (NBC) weapons may be employed. The nuclear and chemical capabilities being designed for the Core Instrumentation Subsystem (CIS) could be used to train the battalion task force to operate effectively in such environments and to provide further awareness of the new and demanding requirements on doctrine and tactics, force dispersion, planning and readiness preparation which result from warfare in a nuclear and/or chemical environment.

The NBC capability shall be designed to maintain the interchangeability characteristic which has always been an important asset of the NTC CIS. All display and control of NBC exercises shall be available at any one of the CIS stations which are used to control the Engagement Simulation (ES) exercises.

## 1.2 Functional Requirements

The primary functional requirements include:

- Prepare for OPFOR nuclear attack
- Prepare for BLUEFOR nuclear strike
- Prepare for chemical agent attack
- Plan and conduct retaliatory chemical operations
- Prepare for operations in a nuclear or chemical environment
- React to initial nuclear effects
- React to delayed nuclear effects
- React to persistent toxic chemical agent attack
- React to nonpersistent chemical agent attack
- Employ chemical agent alarms in static and mobile situations

- Cross or operate in a contaminated area
- Conduct radiological reconnaissance
- Perform partial decontamination without assistance from the NBC defense unit
- Perform partial decontamination with assistance from the NBC defense unit
- Coordinate for complete decontamination of personnel and equipment

## 1.3 Scope

This document assumes that the requirements specified in the Core Instrumentation Subsystem Requirements Design Specification (RDS) (NTC-1221-18) dated 24 May 1982 with Live Fire Supplement dated 1 December 1982 would be effective in the operational system used when implementing the requirements specified for nuclear/chemical processing. All basic requirements of the current 500 Player System with Live Fire enhancements, which accommodates a total of 400 players and 75 units per history (with a total of 1023 players across all histories) will be maintained in the 500 player system which incorporates NBC capabilities.

All subsystem interfaces as described in the 500 Player RDS and Live Fire Supplement will remain the same unless explicitly designated as changed in this document. All basic display features (e.g., background map features) will not change unless this document specifically states that they are changed and describes the change. The following paragraphs describe in detail those deviations from, and additions to, the requirements presented in the 500 Player RDS and Live Fire Supplement which are necessary to accommodate the unique conditions and requirements of NBC processing.

## SECTION 2
## APPLICABLE DOCUMENTS

### 2.1 NTC-CIS Documentation

1. Final Prime Item Development Specification for the National Training Center, Core Instrumentation Subsystem, NTC-1221-25, 16 Aug 82.

2. Requirements Design Specification for the NTC Core Instrumentation Subsystem (500 Player System), Volume 1, NTC-1221-18, 24 May 1982.

3. Requirements Design Specification for the NTC Core Instrumentation Subsystem (500 Player System), Supplement, Integration of the Live Fire Exercise Area, NTC-1221-29, 1 Dec 1982.

4. Field Observer - Controllers Handbook, 1 July 1981.

### 2.2 Army Publications

1. Chemical Reference Handbook, FM 3-8.

2. Employment of Chemical Agents (NWIP 36-2, AFM 355-4, FMFM 11-3), FM 3-10 series.

3. Operational Aspects of Radiological Defense (FMFM 11-5), FM 3-12,

4. Fallout Prediction, FM 3-22.

5. Nuclear, Biological, and Chemical (NBC) Reconnaissance and Contamination Operations, FM 3-87.

6. The Infantry Battalion (Infantry, Airmobile, Air Assault, Ranger), FM 7-20.

7. Combat Communication within the Division (How to Fight), FM 11-50.

8. Military Symbols, FM 21-30.

9. NBC (Nuclear, Biological and Chemical) Defense, FM 21-40.

10. Combat Communications (How to Fight), FM 24-1.

11. The Tank and Mechanized Infantry Company Team, FM 71-1.

12. The Tank and Mechanized Infantry Battalion Task Force, FM 71-2.

13. Operations (How to Fight), FM 100-5.

14. Operational Terms and Graphics, FM 100-5-1.

15. Staff Officers' Field Manual: Nuclear Weapons Employment Doctrine and Procedures (FMFM 11-4), FM 101-31-1.

16. Staff Officers' Field Manual: Nuclear Weapons Employment Effects Data (U) (FMFM 11-4A), FM 101-31-2.

17. Staff Officers' Field Manual: Nuclear Weapons Employment Effects Data (FMFM 11-4B), FM 101-31-3.

18. Chemical, Biological, and Radiological (CBR) Decontamination, TM 3-220.

19. Operator's, Organizational, Maintenance Manual (Including Repair Parts and Special Tools List): Decontaminating Apparatus, Portable, DS2 1 1/2 Quart, ABC-M11 (NSN 4230-00-720-1618), TM 3-4230-204-12P.

20. Operator's and Organizational Maintenance Manual: Alarm Chemical Agent, Automatic, Portable, Manpack, M8; Portable, Fixed Emplacement, M10; Portable, for Truck, 3/4-ton, M12; Portable, for Truck 2 1/2-ton, M13; Portable, for Full-Tracked Armored Personnel Carriers and Recovery Vehicles, M14; Portable, for Carrier, Command and Reconnaissance Armored, M15; Portable, with Power Supply for Truck, Utility, 1/4-ton, M16; and Portable, with Power Supply for Truck, 2 1/2-ton, M18, TM 3-6665-225-12.

21. Operator's, Organization, DS, GS, and Depot Maintenance Manual, Including Repair Parts and Special Tools Lists: Radiac Sets, AN/PDR-27J, AN/PDR-27L, and AN/PDR-27Q, TM 11-6665-209-15.

22. Operator's Manual: Radiacmeters, IM-9E/PD, IM-93/UD, IM-93A/UD, and IM-147/PD, TM 11-6665-214-10.

23. Marking of Contaminated or Dangerous Land Areas, STANAG 2002.

24. Reporting Nuclear Detonation, Radioactive Fallout, and Biological and Chemical Attacks, STANAG 2103.

25. Radiological Survey, STANAG 2112.

26. Dictionary of United States Army Terms, AR 310-25.

27. Authorized Abbreviations and Brevity Codes, AR 310-50.

28. Mechanized Infantry/Tank Task Force, ARTEP 71-2.

29. How to Use the Automatic Chemical Agent Alarm, TC 3-3.

2.3 Military Standards

1. MIL-M-38784, General Requirements for Preparation of Technical Manuals.

2. MIL-STD-490, Specification Practices.

## SECTION 3
## SOFTWARE REQUIREMENTS

### 3.1 Detailed Functional Requirements

### 3.2 Computational Component (CC)

The Computational Component (CC) shall perform all processing necessary to support simulated nuclear and chemical exercises by the Exercise Monitoring and Control (EMC) and Training Analysis and Feedback (TAF) functions. Separate nuclear and chemical models shall be used to provide environmental data to the CIS and both models shall be integrated as part of the CC.

3.2.1 General Requirements of Nuclear/Chemical Modeling - For both nuclear and chemical processing, a player shall remain as currently defined (i.e., "played") in the CIS software. That is, a player shall represent an instrumented or uninstrumented vehicle, weapon system or manpack participating in the exercise. Accumulated radiation statistics shall be maintained by the CC for each of the individual players (i.e., vehicle, weapon system or manpack) identified in the system data base as exercise participants. Chemical contamination statistics shall be maintained by the CC for each of the units identified in the system data base as exercise participants. Casualties involving personnel not identified in the system data base can be manually assessed and input to the system as log entries. In this manner, all field exercise participants may be included in nuclear and chemical effects assessments.

During an exercise segment in which a nuclear or chemical event occurs, the troops must continue tactical operations in addition to reacting to the nuclear/chemical environment. Therefore, all capabilities detailed in the CIS Requirements Design Specification (RDS) for the 500 Player System and Live Fire Supplement shall remain part of the NBC segment in addition to the nuclear and chemical requirements detailed in this supplement.

The CC NBC models shall not contain any classified information. Initially, all computations shall be performed in real time, but the system shall be designed such that model results may be calculated off-line and provided to the CC in an unclassified lookup table format.

All data provided by the nuclear and chemical models shall be historical and available for replay in Historian mode operations. The CC shall have the ability to carry the nuclear and chemical environmental and casualty effects across segment boundaries. The operator shall specify whether or not nuclear and/or chemical processing shall be enabled for an exercise segment via the Exercise Segment

Definition interactive menu. If nuclear and/or chemical processing is enabled, the operator may, through the Exercise Segment Definition interactive menu, elect to accumulate radiation contamination dose rates and chemical contamination levels for players and units across segment boundaries. Null segments that occur between nuclear and/or chemical segments may be assigned a time interval in which radiation and chemical contamination shall be accumulated. In the event of multiple nuclear bursts, radiation shall be accumulated for all events or stopped for all events. Chemical processing shall be handled in the same manner. Nuclear and/or chemical processing shall continue through a Live Fire segment exactly as for any other real segment. The Nuclear and Chemical Event Definition menus shall be available at any time in a history.

If a segment is not defined as a nuclear and/or chemical segment, the NBC Alert category buttons and the buttons provided to control the nuclear and chemical displays (e.g., radiation contours, contaminated players, contaminated areas) shall be disabled. All nuclear menus shall be disabled during non-nuclear segments except for the Nuclear Event Defintion interactive menu. In a non-chemical segment, all chemical menus, except for the Chemical Event Definition interactive menu, shall be disabled. In addition, in non-nuclear or non-chemical exercise segments the nuclear and chemical models shall not be called.

3.2.2 Nuclear Processing - The nuclear model shall be capable of calculating fallout prediction and environmental effects and providing casualty recommendations for both prompt and delayed nuclear effects. The model shall calculate prompt nuclear effects for EMP, radiation dose, shock wave and thermal intensities, all as a function of distance from ground zero. The model shall also be capable of calculating and storing radiation rates as a function of time, location and posture; contamination as a function of player, posture and time; and dose as a function of player, posture and time. For a complete definition of the algorithms used by the nuclear model, see Appendix A - Nuclear Algorithms.

3.2.2.1 Nuclear Event Definition - The system shall accommodate up to ten nuclear events in any one history, three of which may produce fallout. A maximum number of three surface bursts (i.e., fallout producing events) shall be accommodated; additional ground bursts shall be executed as air bursts and shall be logged as such. No shock enhancement effects shall be calculated for simultaneous bursts, and only instantaneous shock propagation and thermal casualty effects shall be considered.

Each nuclear mission shall be uniquely identifed by yield, ground zero and time of burst which shall be operator input buffered to the CC by the IDCC.

The nuclear model shall provide for the following weapon yields, as both air and surface bursts:

- 0.2 KT
- 1 KT
- 2 KT
- 3 KT
- 5 KT
- 8 KT
- 10 KT
- 20 KT
- 50 KT
- 100 KT

The operator shall provide the following information (via the Nuclear Event Definition interactive menu) before a nuclear event is processed by the model:

- Yield,
- Ground Zero,
- Time of Burst,
- Type of Burst (i.e., surface or air),
- Weather, including
  - Wind speed and direction,
  - Visibility, and
- Downwind Distance of Zone 1.

The CIS operator shall provide certain basic weather information including visibility, effective wind speed and direction when the nuclear event is defined. The nuclear model shall automatically calculate upper atmospheric wind patterns which shall be used to calculate fallout effects. A wind shear factor shall be automatically set to 30 degrees. Weather shall remain constant for each event and shall not be affected by the weather defined for other nuclear events.

The Nuclear Event Definition interactive menu shall always be available to provide the operator with the capability to define, edit or cancel events in any segment, real or null. The operator shall be provided with the capability of editing event definition data or cancelling the nuclear event up to two minutes prior to the occurrence of the nuclear event. The Nuclear Event Cancellation alert shall be provided and the Nuclear Event Log status shall be recorded as cancelled if a mission is cancelled. A Fallout Prediction display shall be generated for each nuclear event and shall be updated if changes are made to the event.

3.2.2.2 Player Postures - The nuclear model shall require that players be assigned postures to be used for calculating the radiation dose rate due to initial effects and delayed radiation. The nuclear model shall accommodate the following player postures:

- In the open,
- In an Armored Personnel Carrier (APC),
- In a tank,
- In a wheeled vehicle
- In a foxhole, and
- In an earth shelter.

Each player type shall be assigned a default posture, as defined below:

- Tank - In a tank
- APC - In an APC
- BMP - In an APC
- BRDM - In an APC
- ZSU - In an APC
- Howitzer - In an APC
- Manpack - In a wheeled vehicle
- Manpad - In the open
- Vulcan - In an APC
- Radar - In a wheeled vehicle

- Jammer - In a wheeled vehicle
- Collector - In a wheeled vehicle
- Truck - In a wheeled vehicle
- DIVAD - In an APC
- ADA - In an APC
- SA9 - In an APC
- Mortar - In an APC
- 175" SP Gun - In a wheeled vehicle
- Attack Helicopter - In the open
- Utility Helicopter - In the open
- Observation Helicopter - In the open
- Fighter - In the open
- Bomber - In the open
- Fighter/Bomber - In the open
- Reconnaissance - In the open

The operator shall be able to change the default posture for a particular player or unit via the Player/Unit Posture interactive menu. If a posture is changed from the default, the state entered by the operator shall be the posture used by the model in calculating radiation dose rate. The operator shall be able to change a player's posture at any time throughout the exercise segment. Unit posture selection shall change the posture of each player in the unit.

The default posture for air players shall be in the open pending future enhancements.

3.2.2.3 Nuclear Event Warning Alert - The Nuclear Event Warning alert shall be provided thirty minutes and five minutes prior to a scheduled nuclear event. The alert shall include the following information, all of which is provided through the Nuclear Event Definition interactive menu:

- Scheduled Time of Burst,
- Yield,

- Type of Burst (i.e., ground or air), and
- Ground Zero.

3.2.2.4 Fallout Prediction Processing - Upon definition of a nuclear event, the nuclear model shall calculate the parameters needed by the IDCC to provide a Fallout Prediction display. In the event of changes or deletions to the mission, the model shall recalculate the parameters. The model shall utilize the following information provided by the Nuclear Event Definition interactive menu:

- Ground Zero,
- Time of Burst,
- Wind Speed,
- Wind Direction, and
- Downwind Distance of Zone 1.

In addition, the model shall determine the cloud radius, based upon yield, as follows:

| YIELD | CLOUD RADIUS |
|---|---|
| .2 KT | 0.46 KM |
| 1 KT | 0.9 KM |
| 2 KT | 1.2 KM |
| 3 KT | 1.6 KM |
| 5 KT | 1.9 KM |
| 8 KT | 2.3 KM |
| 10 KT | 2.6 KM |
| 20 KT | 3.5 KM |
| 50 KT | 5.1 KM |
| 100 KT | 6.7 KM |

The downwind distance of zone 2 shall be calculated by doubling the value entered for the downwind distance of zone 1. Tangents shall be specified at 20 degree angles from each upwind radius point. The time of arrival arcs shall be calculated based upon distance from ground zero and effective wind speed.

The model shall provide the IDCC with the following parameters for construction of the Fallout Prediction display:

- Ground zero,

- Downwind direction,
- Boundary points of the upwind arc for zone 1,
- Boundary points of the downwind arc for zone 1,
- Boundary points of the downwind arc for zone 2, and
- Boundary points for the time of arrival arcs for 1, 2, and 3 hours from the time of the blast.

3.2.2.5 Prompt Nuclear Effects Processing - The nuclear model shall calculate the following prompt nuclear effects as a function of distance from ground zero:

- Electromagnetic pulse (EMP) volts/meter,
- Immediate nuclear radiation doses (combined gamma and neutron) in rads,
- Shock wave/blast peak overpressure (psi) and overpressure impulse (psi-second),
- Peak dynamic pressure (psi) and dynamic impulse (psi-second), and
- Thermal/optical radiation intensities (calories/sq cm).

Weather and terrain shall not be considered for calculation of effects for EMP, nuclear radiation, or blast. Visibility shall be the only weather effect included in the calculation of thermal radiation effects. This information shall not be displayed, but shall be used to identify recommended casualties due to prompt effects and for calculation of the lethal radii used for the Prompt Effects display. The Prompt Effects display shall show ground zero, height of burst, yield and the maximum lethal radii for each of the following target types: tanks, APCs and troops in the open. All player types other than tanks or APCs shall be defined as troops in the open.

The CC shall generate a casualty recommendation alert which shall recommend the casualties in each posture category which should occur based upon a unit's proximity to ground zero. The alert shall be generated for each leaf unit which incurred casualties from prompt effects. Leaf units shall be those units identified in the system data base which are the lowest units of the command link, given operator defined unit organization (e.g., platoons or artillery batteries).

The Prompt Nuclear Effects Casualty Recommendation alert shall include the percentage of personnel not accounted for in the system data base (i.e., not identified as individual players) to be assessed as casualties in accordance with each posture category. A list of up to ten players actually identified in the system data base to be assessed as casualties shall also be included. The alert shall also provide the percentage of equipment which should be disabled for various equipment postures (e.g., in use, off, antenna disconnected, and shielded/packed).

3.2.2.6 Cumulative Radiation Processing - The player location information maintained by the CC shall be used in calculating the accumulated radiation dose of individual players. Cumulative radiation doses shall be maintained for each instrumented and uninstrumented player defined in the system data base.

An option shall be provided for accumulation of the dose rates of radiation for players and units across segment boundaries. A capability shall be provided so that when a null segment occurs between NBC real segments, an effective time interval for the null segment may be specified at the start of the real segment. Radiation rates and accumulated doses shall be adjusted to include the time interval, and casualty recommendations shall be issued. Players shall not be tracked in the null segment for purposes of accumulating radiation; their position at the opening of the real segment shall be used for calculating accumulated doses during the null interval time.

The accumulated doses shall be calculated based upon the player's assigned posture, position/location (PL) data, contamination level, and radiation contours. The rate of radiation contamination shall be a function of the player's posture.

Accumulated radiation dose statistics shall also be kept for each leaf unit. Cumulative radiation dose levels shall be calculated for units based upon the unit's center of mass. For no-player units (i.e., those units identified in the system data base with no associated players), PL data which is entered by the operator through the existing Player/Unit Location interactive menu shall be used to calculate the unit's accumulated radiation dose level.

For nuclear processing, a player shall be considered to be contaminated whenever his radiation dose rate is higher than the dose rate that results from his surroundings and is greater than 1 rad per hour. If a player has been decontaminated, as specified by the operator via the Decontamination interactive menu, the model shall accumulate radiation at a slower rate than if a player is not decontaminated. The radiation dose of the player shall not be reduced as a result of decontamination.

When a unit receives a 10% casualty recommendation for any posture category, the Cumulative Nuclear Effects Casualty Recommendation alert shall be displayed. This alert recommends the percentage (to the nearest 10%) of personnel in each posture who should be killed. Up to ten individual player kill recommendations (by bumper number) shall also be provided based upon stored player postures and a random draw. The Cumulative Nuclear Effects Casualty Recommendation alert shall be redisplayed whenever the casualty estimate of the unit increases by 20%. The alert shall indicate both the previous casualty recommendation percentages (for exercise participants) and the current recommendations.

The model shall maintain the radiation level of a killed player. If that player is later resurrected via the Player Resurrect interactive menu, the radiation statistics for the player are cleared for resupply and maintained for accidental kill.

3.2.2.7 Nuclear Casualty Assessment Processing - Upon receipt of casualty recommendations due to either prompt or delayed nuclear effects, the CIS operator shall be provided with the capability of having the casualties assessed in one of two ways: through an interactive menu at the CIS or through controller gun kill. If desired, a mixture of the two approaches shall also be available. Each basic approach is discussed below.

3.2.2.7.1 Assessment by Interactive Menu - The CIS operator shall have the capability of using the Player Kill interactive menu to kill any instrumented or uninstrumented players recommended as casualties. The Player Kill interactive menu shall be updated to specify a nuclear kill. The kill message shall then be sent to the appropriate players via the RDMS and an acknowledgement message shall be received. A button on the Master Menu shall control the display of players who were killed as a result of the nuclear event.

The OC will be responsible for assessing casualties for those personnel who are participating in the exercise but who are not defined in the system data base. These participants shall be marked as casualties in the field using the same procedure as is used for other types of casualties.

3.2.2.7.2 Assessment by OC - With this method, the OC shall assess all nuclear casualties for instrumented and uninstrumented players and for participants not defined in the exercise data base. The CIS operator shall be responsible for providing the casualty recommendations to the OC. The OC will use his controller gun to assess casualties for instrumented players. Controller gun kills shall be reported to the CC via the RDMS. Uninstrumented

players and exercise participants not defined in the system data base shall be tagged by the OC as killed in the same manner currently used for other types of kills.

3.2.2.7.3 Nuclear Casualty Logging - The OC shall be responsible for reporting which casualties were assessed due to nuclear effects for a particular unit. The CIS operator will enter the total number of personnel involved in the exercise but not defined in the CIS data base who were assessed as casualties due to nuclear effects for each posture category using the Nuclear Mission Result interactive menu. In addition, the CC shall provide the operator with a list of all OC kills so that these kills can be attributed to nuclear effects. A list of all nuclear kills assessed through the Player Kill interactive menu (Figure 13) shall also be provided in order to log the nuclear kill for each unit.

3.2.2.8 Statistical Data Processing

3.2.2.8.1 Nuclear Event Log - The Nuclear Event Log shall record time of burst, weapon yield, ground zero, and type of burst for each nuclear event. Status of nuclear events shall also be listed in the event log as cancelled, executed, or not executed. Nuclear events which are not executed represent; for example, events that are scheduled to occur in a null or nonnuclear segment. If more than three fallout producing events are defined in a history, the additional bursts shall be executed and logged as air bursts.

The format of the Nuclear Event Log is shown in Figure 1.

3.2.2.8.2 Nuclear Casualty Log - The Nuclear Casualty Log shall record kills caused by nuclear effects. The data shall be made available to the CC via the Nuclear Mission Result interactive menu.

The Nuclear Casualty Log shall be provided for a particular point in time by unit and shall contain, as a minimum, the following information:

- For players defined in the system data base, a list of killed players by player ID.
- For all other personnel involved in the exercise, the number killed in each posture category.

The format of the Nuclear Casualty Log is shown in Figure 2.

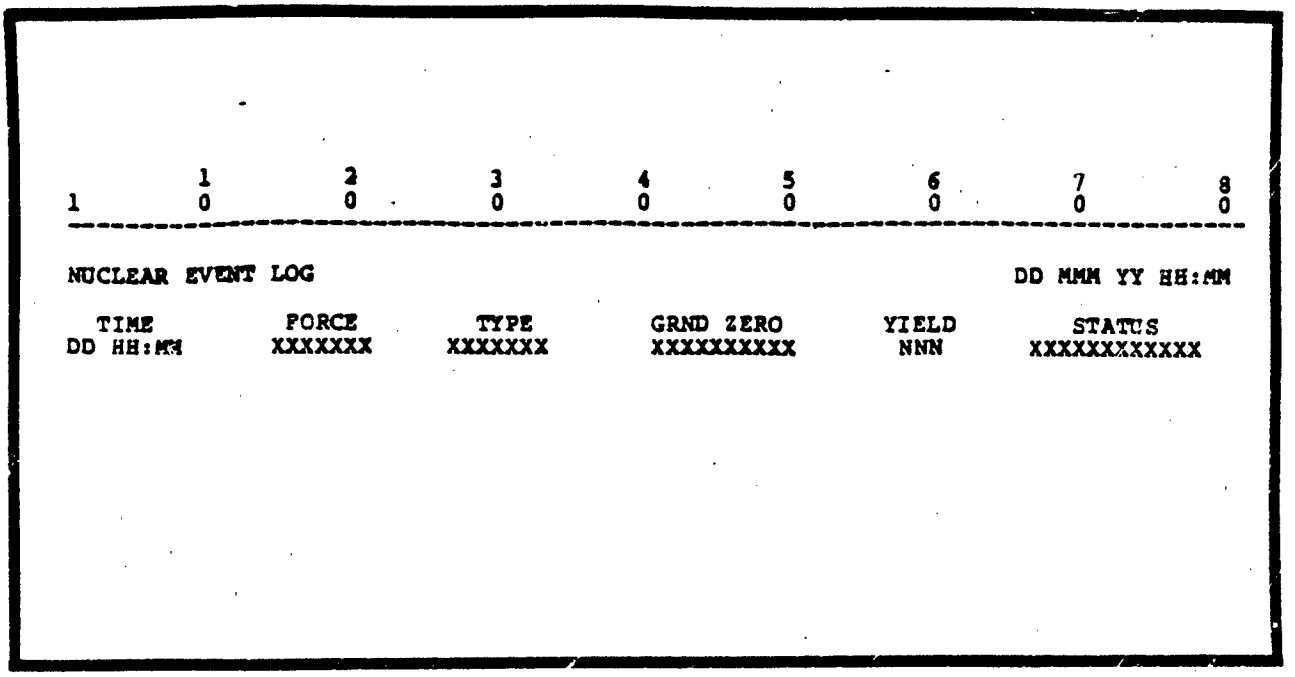



Figure 1. Nuclear event log.

TITLE: Nuclear Event Log

DISPLAY TYPE: Tabular

CONTENT:

| Column Heading | Description |
|---|---|
| TIME | Scheduled time of burst for nuclear event as defined by the operator via an interactive menu. |
| FORCE | Name of force initiating the nuclear event as defined by the operator via an interactive menu. |
| TYPE | Type of nuclear burst (i.e., ground or air) as defined by the operator via an interactive menu. |
| GROUND ZERO | Location of target, in UTM coordinates, for the nuclear event as defined by the operator via an interactive menu. |
| YIELD | Weapon yield, in KT, as defined by the operator via an interactive menu. |
| STATUS | The status of the nuclear event, (i.e., cancelled, executed, and not executed). Not executed nuclear events shall be, for example, events scheduled to occur in a null or non-nuclear segment. |

DISPLAY CRITERIA:

| | |
|---|---|
| TIME | All data on nuclear events shall be displayed for the entire history from the beginning of the history to the exercise time as displayed on the Tactical Display at the time of the display request. |

Figure 1. Nuclear event log (Concluded).

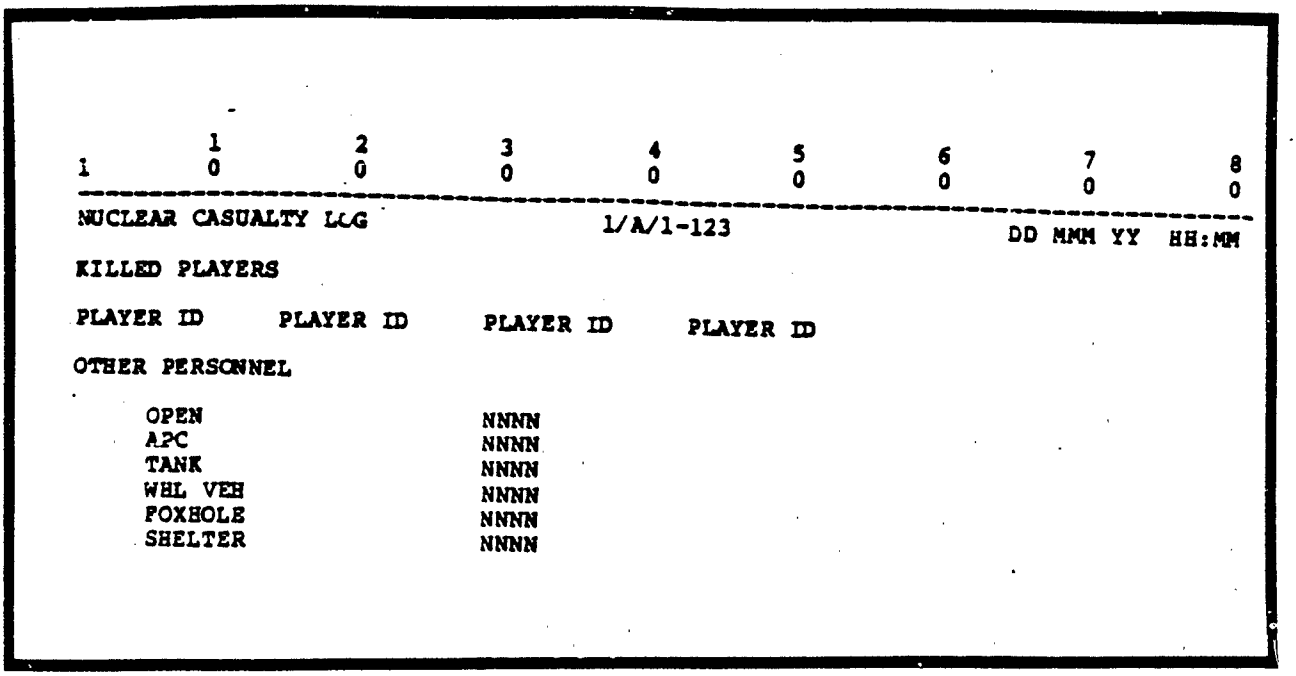



Figure 2. Nuclear casualty log.

TITLE: Nuclear Casualty Log

DISPLAY TYPE: Tabular

CONTENT:

| Column Heading | Description |
|---|---|
| KILLED PLAYERS | For players defined in the system data base, a list of up to ten killed players for the named unit by player ID. |
| OTHER PERSONNEL | For all other personnel involved in the exercise, the number killed for the named unit in each posture category. |

DISPLAY CRITERIA:

| | |
|---|---|
| TIME | All data on nuclear casualties shall be displayed for the entire history from the beginning of the history to the exercise time as displayed on the Tactical Display at the time of the display request or for an operator defined time interval. |
| UNIT | The operator specifies a leaf unit for which nuclear casualty data is desired. |

Figure 2. Nuclear casualty log (Concluded).

3.2.2.8.3 Accumulated Radiation Report - The Accumulated Radiation Report shall indicate the accumulated radiation status of a specified leaf unit based upon the unit's center of mass. The report shall be for a specific exercise segment; however, the information contained in the display shall represent radiation accumulation across segment boundaries. The report shall include the following information for each posture category:

- Average radiation rate of the external environment,
- Average radiation rate personnel are exposed based on posture category,
- Average accumulated radiation dose,
- Ultimate percent of casualties expected to occur at the estimated time of late disability,
- Estimated time to possible disability based on the radiation dose and contamination level for the unit, and
- Estimated time to certain disability based on the radiation dose and contamination level for the unit.

The format of the Accumulated Radiation Report is shown in Figure 3.

3.2.2.8.4 Radiation Dose Rate Over Time - The Radiation Dose Rate Over Time graphical display shall indicate the average radiation dose rate of a selected leaf unit for each posture category in the range of 0 to 500 rads and in the range of 500 to 1000 rads. These displays may be requested for the last 24 time periods (two hours) or for an operator defined time period. (NOTE: if the operator enters a time range greater than two hours, the 24 time periods preceding the ending time shall be displayed.) The unit's dose rate shall be based upon the center of mass of the unit.

The basic format of the Radiation Dose Rate Over Time graphical display is shown in Figure 4.

3.2.3 Chemical Processing - The chemical model shall be capable of calculating and storing chemical environmental contamination as a function of chemical agent, time, delivery method, and weather. A Chemical Hazard Prediction display shall be provided. Contamination shall be a function of posture, protection status, time, and location. Only two categories of contamination (i.e., contaminated or uncontaminated) shall exist. The model shall be capable of providing casualty recommendations by leaf units.

```
        1         2         3         4         5         6         7         8
1       0         0         0         0         0         0         0         0
```

ACCUMULATED RADIATION REPORT 1/A/2-123 DD MMM YY HH:MM

| POSTURE | EXTERNAL RAD RATE (RAD/HR) | INTERNAL RAD RATE (RAD/HR) | RADIATION DOSE (RAD) | ULTIMATE CASUALTIES | EST TIME TO EARLY DISABILITY | EST TIME TO LATE DISABILITY |
|---|---|---|---|---|---|---|
| OPEN | NNNN | NNNN | NNNN | NNNN | NNNN | NNNN |
| APC | | | | | | |
| TANK | | | | | | |
| WHL VEH | | | | | | |
| FOXHOLE | | | | | | |
| SHELTER | | | | | | |

Figure 3. Accumulated radiation report.

TITLE: Accumulated Radiation Report

DISPLAY TYPE: Tabular

CONTENT:

| Column Heading | Description |
|---|---|
| POSTURE | List of posture categories for the named unit, as indicated on the preceding page. |
| EXTERNAL RADIATION RATE | For each posture category of the named unit, the average radiation rate (rads/hr) of the external environment. |
| INTERNAL RADIATION RATE | For each posture category of the named unit, the average radiation rate (rads/hr) personnel are actually exposed to given the protection factor of the posture category. |
| RADIATION DOSE | For each posture category of the named unit, the average accumulated radiation dose. |
| ULTIMATE CASUALTIES | For each posture category of the named unit, the ultimate percent of casualties expected to occur at the estimated time to late disability. |
| ESTIMATED TIME TO EARLY DISABILITY | For each posture category of the named unit, the estimated time to possible disability based on the radiation dose and contamination level for the unit (in hours). |
| ESTIMATED TIME TO LATE DISABILITY | For each posture category of the named unit, the estimated time to certain disability based on the radiation dose and contamination level for the unit (in hours). |

DISPLAY CRITERIA:

| | |
|---|---|
| TIME | The display shall contain all data for the entire history from the beginning of the history to the exercise time as displayed on the Tactical Display at the time of the display request. |
| UNIT | The display shall represent data for any operator selected leaf unit. |

Figure 3. Accumulated radiation report (Concluded).

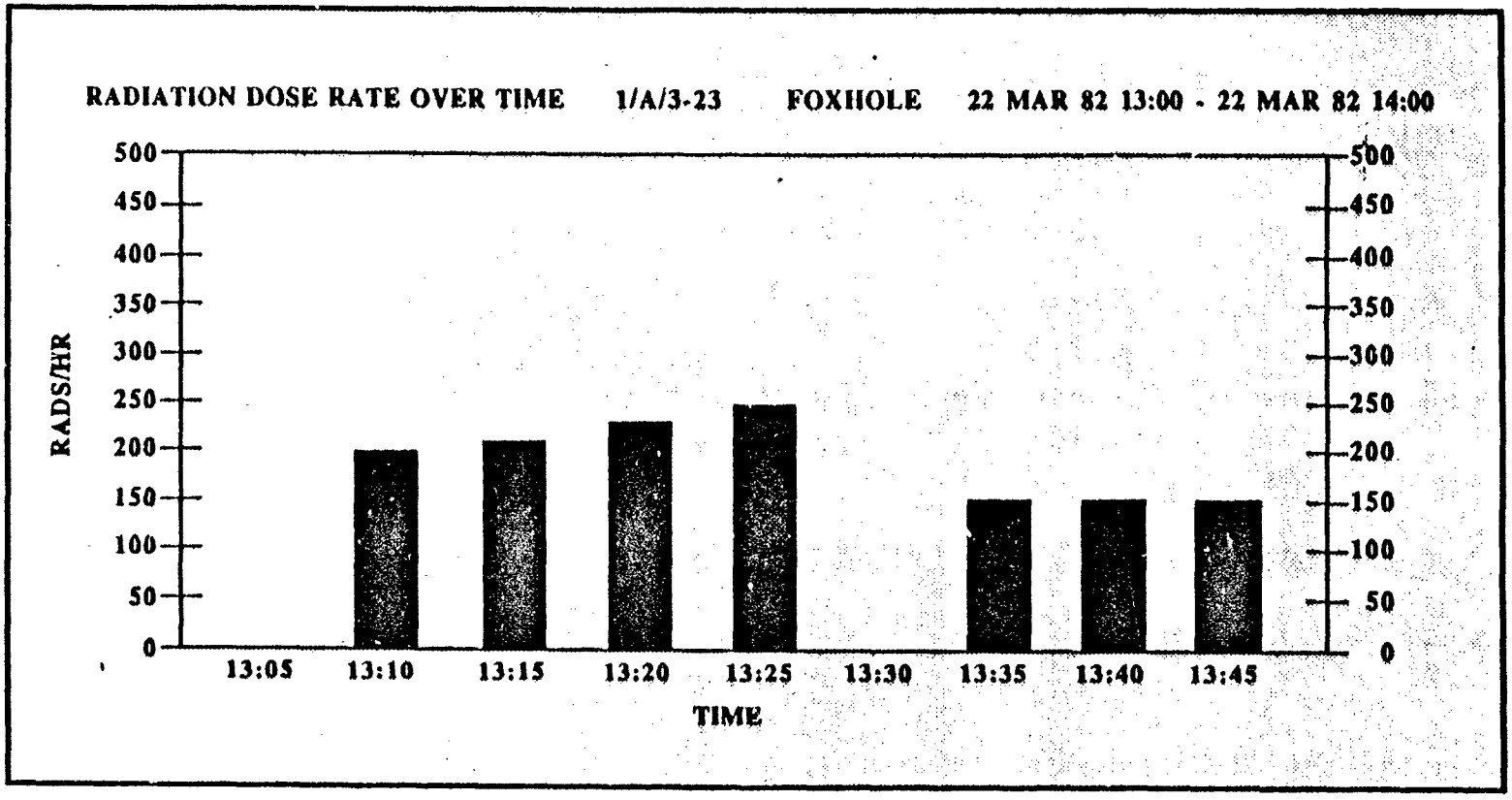



Figure 4. Radiation dose rate over time.

TITLE: Radiation Dose Rate Over Time

DISPLAY TYPE: Graph

CONTENT:

| Column Heading | Description |
|---|---|
| RADS PER HOUR | The unit's average radiation dose rate based on the unit's center of mass. |
| DISPLAY CRITERIA: | |
| TIME | The graph shall contain data for the last 24 time periods (2 hours) from the time of the display request, or for an operator defined time interval.<br><br>NOTE: If the operator enters a time range greater than two hours, the 24 time periods preceding the ending time shall be displayed. |
| RANGE | The operator shall specify the range (from 0 to 500 rads or from 500 to 1000 rads) for which data shall be provided. |
| UNIT | The display shall include all data for an operator specified leaf unit. |
| POSTURE | The display shall include all data for a posture category selected by the operator. |

Figure 4. Radiation dose rate over time.(Concluded).

3.2.3.1 Chemical Event Definition - The system shall accommodate a total of 20 active chemical events in any one history; each defined event (with single or multiple deliveries) shall be handled as a single event with a single area of contamination being created. Once the chemical effects from an event dissipate, that event shall be automatically deleted and another event can be defined in its place. An event can be defined in a segment other than the one in which it will occur.

A chemical mission shall be identified by time, center of impact area, delivery method, and chemical agent.

The operator must enter the following information (via the Chemical Event Definition interactive menu) to define a chemical event:

- Delivery Method (i.e., artillery, rocket, air spray, or air bomb),
- Type of Attack (i.e., casualty, obstacle, or harassment),
- Center of Impact Area,
- Type of Chemical Agent,
- Amount of Chemical Agent,
- Weather, including
  - Wind speed and direction,
  - Temperature,
  - Temperature gradient,
  - Precipitation (if any), and
- Time of Event.

For each type of delivery (i.e., i.e., artillery, rocket, air bomb, and air spray) the operator shall select a type of attack (i.e., casualty, obstacle, or harassment) and enter the UTM coordinates of the center of the impact area. Operator selection of a type of attack (i.e., casualty, obstacle, or harassment) shall determine the concentration level and radius of the chemical cloud at the time of delivery as recommended by the chemical model (in accordance with weapon type, agent type, etc.). In general, the dispersement of the agent in the area of coverage (i.e., the radius and concentration level of the chemical cloud) as determined by type of attack shall be as follows:

- Casualty Attack - high concentration level, small radius
- Obstacle Attack - medium concentration level, medium radius
- Harassment Attack - low concentration level, large radius

For a complete definition of the algorithms used by the chemical model see Appendix B - Chemical Algorithms.

For chemical agents delivered by means of artillery or rocket, the target list used by the indirect fire function of the 500 player CIS system shall be used in defining chemical event targets. Therefore, any new targets or groups of targets which are entered via the Chemical Event Definition interactive menu shall be added to the indirect fire target list and all previously defined targets in this list shall be available as chemical targets.

A single defined chemical event shall utilize either persistent or nonpersistent nerve agents, persistent blister agents (e.g., soman, mustard), or nonpersistent blood agents (e.g., hydrogen cyanide). A combination of agent types shall be available by defining separate chemical events. Agent type shall be operator entered via the Chemical Event Definition interactive menu in accordance with method of attack, delivery method, and weapon.

The amount of chemical agent to be delivered shall be operator entered via the Chemical Event Definition interactive menu. The operator shall enter the number of rounds for artillery, rockets for rocket delivery, bombs for air bombs delivery, and spray tanks in a sortie for delivery by air spray.

The CIS operator shall also provide certain basic weather information (i.e., wind speed and direction, temperature, temperature gradient, and amount of precipitation) when defining the chemical event. The chemical model shall automatically calculate any wind patterns which affect the movement of the chemically contaminated area.

The CIS operators shall be provided with a warning message thirty minutes and five minutes prior to a scheduled chemical event. As a minimum, the alert shall include the following information, all of which is provided through the Chemical Event Definition interactive menu:

- Scheduled Time of Event,

- Delivery Method (i.e., artillery, rocket, air bomb or air spray),
- Center of Impact Area, and
- Type of Chemical Agent.

The Chemical Event Definition interactive menu shall always be available to provide the operator with the capability to define, edit, or cancel events in any segment, real or null. The operator shall be provided with the capability of editing chemical event definition data or cancelling the chemical event up to 60 seconds prior to the occurrence of the event. The Chemical Event Cancellation alert shall be provided and the Chemical Event Log status shall be recorded as cancelled if a mission is cancelled. A Downwind Hazard Prediction display shall be generated for each chemical event and shall be updated if changes are made to the event.

3.2.3.2 Unit Posture - The chemical model shall provide casualty recommendations based on posture and Mission Oriented Protective Posture (MOPP) levels. The posture categories considered by the model shall include in the open, protected, and covered. MOPPs considered by the model shall include:

- MOPP 0 (unprotected),
- MOPP 1 (overgarment worn open or closed; overboots, mask/hood and gloves carried),
- MOPP 2 (overgarment worn open or closed, overboots worn; hood and gloves carried),
- MOPP 3 (overgarment worn open or closed, overboots worn, hood worn open, and gloves carried),
- MOPP 4 (all protective gear worn closed), and
- MOPP 5 (mask/hood worn open or closed).

When calculating contamination recommendations for personnel in MOPPs 1, 2, 3, and 5, the chemical model shall consider 50% of the garments warn to be closed and 50% to be open. Casualty alerts shall provide recommendations for each posture/MOPP category. The field controllers will utilize the recommendations in the assessment of casualties.

3.2.3.3 Chemical Hazard Prediction Processing - Upon definition of a chemical event, the chemical model shall calculate the parameters needed by the IDCC to provide a Chemical Hazard Prediction display. The model shall utilize

the following information provided by the Chemical Event Definition interactive menu:

- Type of Chemical Agent,
- Amount of Chemical Agent,
- Center of Impact Area,
- Weather, including
  1. Wind Direction,
  2. Wind Speed, and
  3. Stability.

The model shall provide data for a hazard area arc, two 30 degree tangents and the maximum downwind distance.

The model shall provide the IDCC with the following parameters:

- Downwind direction,
- Center of Impact area,
- Boundary point of the upwind arc, and
- Downwind boundary points of the 30 degree tangents.

With this data, the IDCC shall construct the Chemical Hazard Prediction display. For chemical events with wind speeds of 10 KM/HR or less, the Chemical Hazard Prediction display shall consist of a circle representing the hazard area.

3.2.3.4 Chemical Effects Processing - The chemical model shall define the chemically contaminated area as that area in which the level of contamination exceeds the chemical alarm's threshold level for activation. The model shall not consider the effects of contaminated areas with lesser concentrations. The automatic chemical agent alarm system to be used shall be the M43 Detector Unit and the M42 Alarm Unit. The alarm threshold levels utilized by the model shall be based on the threshold levels of the M43 Detector Unit. The boundaries of the contaminated area shall be in an elliptical pattern and shall change as a function of time and weather. Weather shall remain constant for each event and shall not be affected by the weather defined for other chemical events.

The model shall provide the IDCC with the location of the contaminated area, the radial distances and two foci in order to construct the Chemically Contaminated Area display.

Contamination effects for an area shall be able to be continued across segment boundaries. When a null segment occurs between NBC real segments, a time interval may be specified at the start of the real segment; chemical contamination shall be continued for that period of time. The size of the area contaminated shall be calculated based on the interval time entered by the operator and weather conditions shall be as defined in the event. Players shall not be tracked in the null segment for purposes of defining chemical contamination; their position at the opening of the real segment shall be used for the null interval time.

The Chemical Alarm Assignment interactive menu shall be used to indicate that a player is a chemical alarm. Once a chemical event has occurred, the location of each chemical alarm shall be checked by the chemical model to determine if any are within the chemically contaminated area (either by being present during the chemical event, by the changing boundaries of the chemically contaminated area or by the player associated with the chemical alarm moving into the contaminated area). Whenever a chemical alarm is found to be located in a chemically contaminated area, the Chemical Alarm alert shall be generated. This alert shall contain a recommendation that the alarm be activated to warn troops of the chemical event.

The unit in a Contaminated Area alert shall be generated for each leaf unit located in a contaminated area (either by being present during the chemical event, by the changing boundaries of the chemically contaminated area, or by players moving into the contaminated area). The alert shall provide a list of the actual instrumented and uninstrumented players in the unit (by player ID) who were within the boundaries of the contaminated area. No-player units shall be considered to be within the contaminated area if the unit's center of mass is within the area. A player unit shall be considered to be within the boundaries of the contaminated area if any player attached to the unit is in the area. The alert shall be issued at the time of initial effect from a contaminated area and shall be reissued only if the unit moves to an uncontaminated area and subsequently reenters a contaminated area.

The Chemical Effects Casualty Recommendation alert shall provide the percentage (to the nearest 10%) of personnel in each posture and MOPP category who should be killed. The model shall assume a 15 second masking time when making casualty recommendations and shall consider a minimum casualty effect of 10% for players within the contaminated area, regardless of MOPP or posture level. The Chemical Effects Casualty Recommendation alert shall be

redisplayed whenever the unit's casualty recommendation in any of the MOPP/posture categories increases by 20%. The percentage shall reflect the percentage of casualties from the original unit size and, when redisplayed, the alert shall indicate the previous casualty recommendation percentages for the unit.

For persistent agents, the model shall calculate, based upon the type of agent, the amount of time a unit has to decontaminate before casualties result for each posture and MOPP category. For chemical processing, a unit shall be considered to be contaminated if the unit has entered a chemically contaminated area and has not decontaminated. If a unit has not decontaminated prior to the calculated time for a posture/MOPP category, the Chemical Effects Casualty Recommendation alert shall be generated.

3.2.3.5 Chemical Casualty Assessment Processing - The CIS operator shall be responsible for transmitting the casualty recommendations provided by the CC to the OCs in the field. The OC shall be responsible for acting upon the recommendations and actually assessing field casualties. In assessing casualties, the OC should consider the rapidity with which participants entered the required postures and the proximity of participants who are not defined in the CIS data base to players who are found to be in the contaminated area.

The OC shall be responsible for reporting casualties which were assessed due to chemical effects. The CIS operator shall call the Chemical Mission Result interactive menu to attribute casualties to chemical effects. The CIS operator will enter the total number of personnel involved in the exercise (by unit) who were assessed as casualties due to chemical effects in each posture and MOPP category.

3.2.3.6 Chemical Event Cancellation - Once an event has occurred, the operator shall have the capability of cancelling the event proccesses via the Chemical Event Definition menu. Upon cancellation, all environmental effects for the event shall be discontinued. However, any chemical contamination of personnel that occurred as a result of the event (i.e., dose received, dose rate, disability, etc.) prior to event cancellation shall remain in effect. The Chemical Event Cancellation alert shall be provided upon cancellation. For event cancellation prior to execution, refer to Section 3.2.3.1 Chemical Event Definition.

3.2.3.7 Statistical Data Processing

3.2.3.7.1 Chemical Event Log - The Chemical Event Log shall record time of event, force, type of chemical agent, center of impact area, and delivery method. Status of chemical events shall also be listed in the event log as cancelled,

executed, or not executed. Events recorded as cancelled shall refer to those cancelled prior to the occurrence of the event. Chemical events which are not executed represent; for example, events which are scheduled to occur in a null or nonchemical segment.

The format of the Chemical Event Log is shown in Figure 5.

3.2.3.7.2 Chemical Casualty Log - The Chemical Casualty Log shall consist of a log of all kills caused by chemical effects. The data shall be made available to the CC via the Chemical Mission Result interactive menu.

The Chemical Casualty Log shall be provided by unit and shall contain, as a minimum, the total number of exercise participants killed in each MOPP and posture category.

The format of the Chemical Casualty Log is shown in Figure 6.

3.2.3.7.3 Chemical Contamination Report - The Chemical Contamination Report shall provide long term casualty contamination data by unit. The report shall record the type of agent and the ultimate time of disability (the number of hours from the time of the display request at which certain disability will occur) by posture category (i.e., in the open, protected, covered) for unit personnel in MOPP 4. The data shall be made available to the CC via the chemical model.

The format of the Chemical Contamination Report is shown in Figure 7.

3.3 Interactive Display and Control Component (IDCC)

3.3.1 Tactical Displays - All displays which are available through the IDCC (i.e., digital background map, tactical symbology, tactical/operational menus, side panel data and operator alerts) shall be available during nuclear and chemical processing. In addition, the following paragraphs define new IDCC requirements to be incorporated into the CIS software to support nuclear and chemical processing.

Symbology required for nuclear processing is shown in Figure 8.

Symbology required for chemical processing is shown in Figure 9.

3.3.1.1 Nuclear Prompt Effects Display - When a nuclear event occurs, a display shall be provided which shows the ground zero, height of burst, and yield; and shows the largest immediate lethal radius for each of three target types: tanks, APCs, and troops in the open. The display of

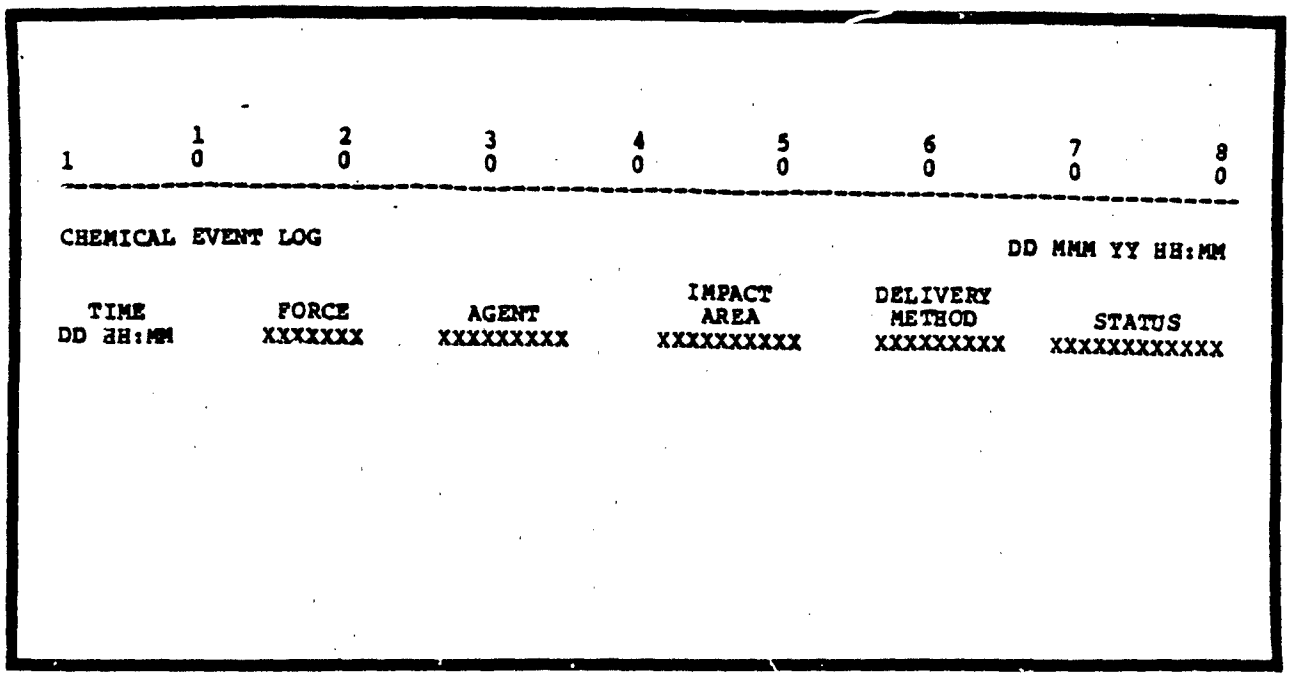



Figure 5. Chemical event log.

TITLE: Chemical Event Log

DISPLAY TYPE: Tabular

CONTENT:

| Column Heading | Description |
|---|---|
| TIME | Scheduled mission time for chemical event, as defined by the operator via an interactive menu. |
| FORCE | Name of force initiating the chemical event, as defined by the operator via an interactive menu. |
| AGENT | Type of chemical agent (i.e., PNERVE, PBLISTER, NPNERVE, NPBLOOD) as defined by the operator via an interactive menu. |
| IMPACT AREA | The impact location, in UTM coordinates, for the chemical event as defined by the operator via an interactive menu. For air spray or air bomb delivery, the center of the impact area shall be provided. For groups of targets, the group name shall be listed. |
| DELIVERY METHOD | Delivery method (i.e., ARTILLERY, ROCKET, AIR SPRAY, AIR BOMBS) as defined by the operator via an interactive menu. |
| STATUS | The status of the chemical event (i.e., cancelled, executed, and not executed). Not executed chemical events shall be; for example, events scheduled to occur in a null or non-chemical segment. |

DISPLAY CRITERIA:

| | |
|---|---|
| TIME | All data on chemical events shall be displayed for the entire history from the beginning of the history to the exercise time as displayed on the Tactical Display at the time of the display request. |

Figure 5. Chemical event log (Concluded).

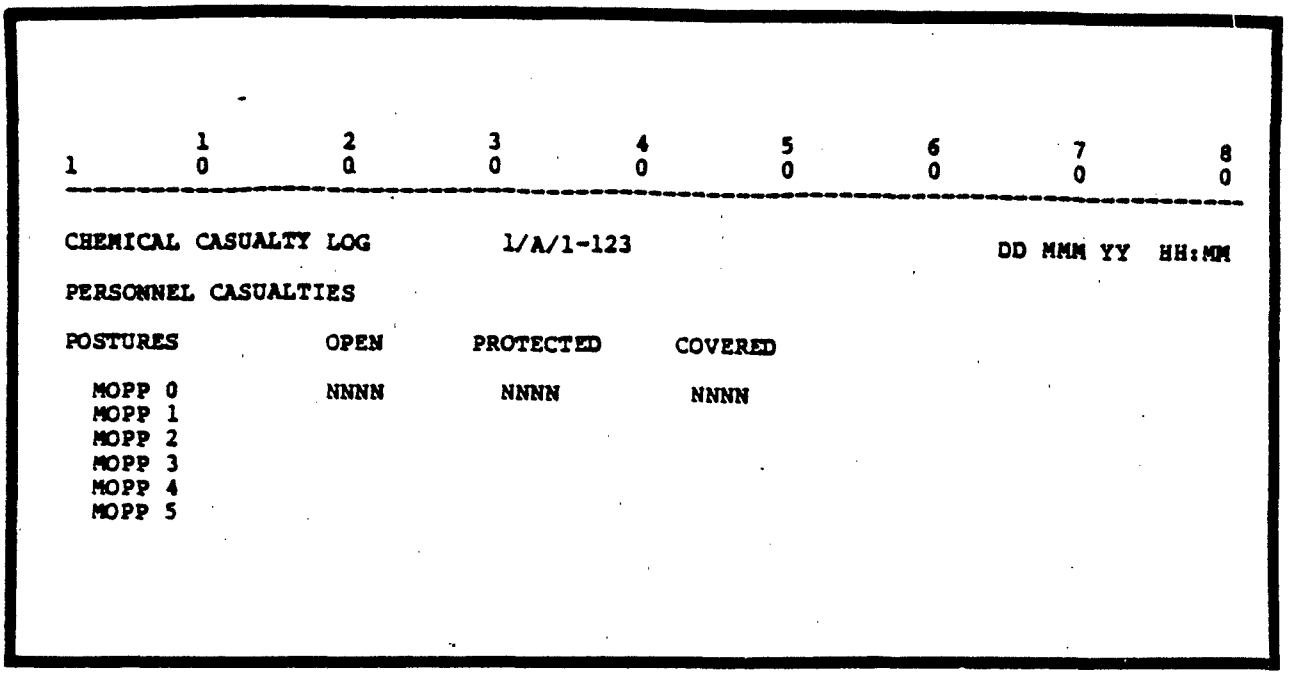



Figure 6. Chemical casualty log.

TITLE: Chemical Casualty Log

DISPLAY TYPE: Tabular

CONTENT:

| Column Heading | Description |
|---|---|
| PERSONNEL CASUALTIES | For all personnel involved in the exercise, the number killed for the named unit in each MOPP and posture category. |

DISPLAY CRITERIA:

| | |
|---|---|
| TIME | All data on chemical casualties shall be displayed for the entire history from the beginning of the history to the exercise time as displayed on the Tactical Display at the time of the display request or for an operator defined time interval. |
| UNIT | The display shall represent data for any operator selected leaf unit. |

Figure 6. Chemical casualty log (Concluded).

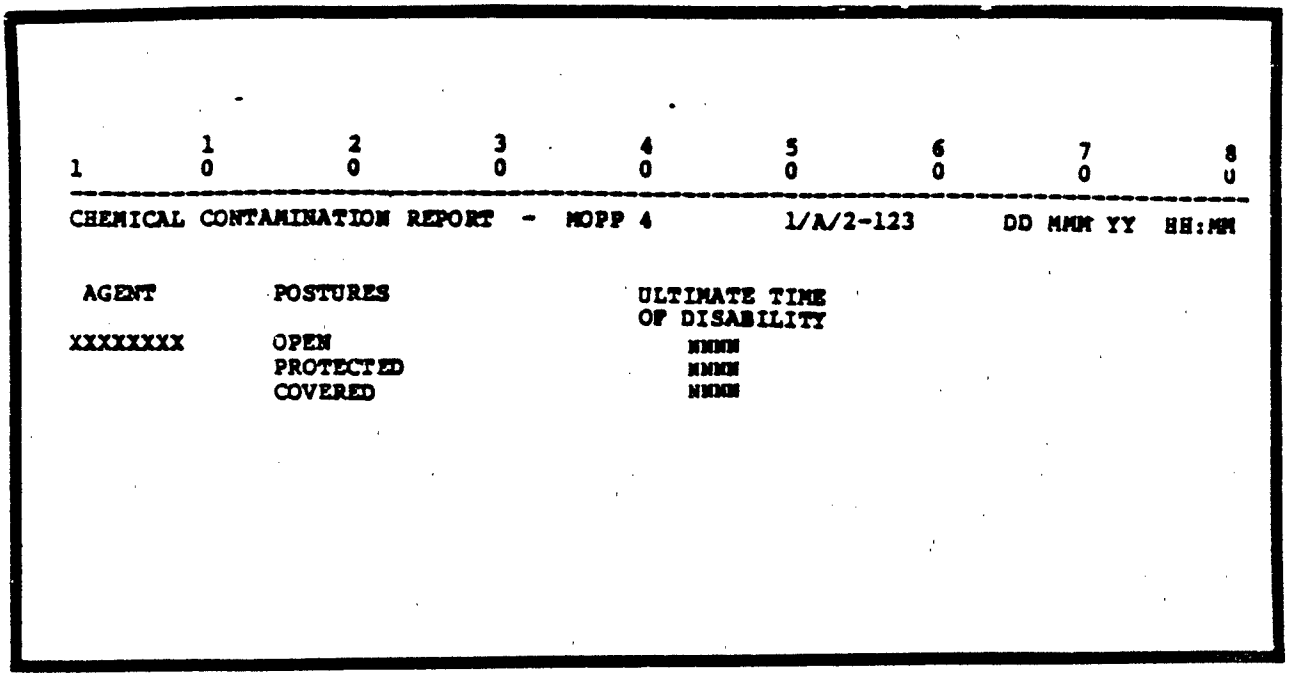



Figure 7. Chemical contamination report.

TITLE: Chemical Contamination Report

DISPLAY TYPE: Tabular

CONTENT:

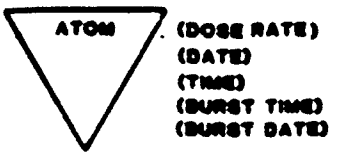
| Column Heading | Description |
|---|---|
| POSTURE | List of posture categories for the named leaf unit (i.e., IN THE OPEN, PROTECTED, COVERED). |
| AGENT | Type of chemical agent (i.e., PNERVE, PBLISTER, NPNERVE, NPBLOOD) as defined by the operator via an interactive menu. |
| ESTIMATED TIME OF DISABILITY | For each posture category of the named unit, the estimated number of hours from the time of the display request at which certain disability will occur based on chemical agent, dose, and dose rate. |

DISPLAY CRITERIA:

| | |
|---|---|
| TIME | The display shall contain all data for the entire history from the beginning of the history to the exercise time as displayed on the Tactical Display at the time of the display request. |
| UNIT | The display shall represent data for any operator selected leaf unit. |
| MOPP | The display shall represent chemical contamination data only for personnel in MOPP 4 (in which all protective gear is worn closed). |

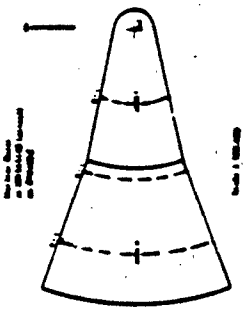
Figure 7. Chemical contamination report (Concluded).

1. Radiological Marker




2. Radiation Contours

3. Fallout Prediction



4. Prompt Effects Display

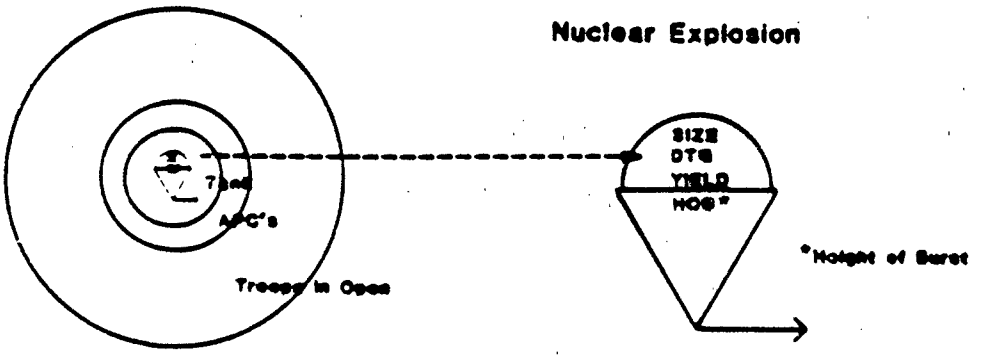
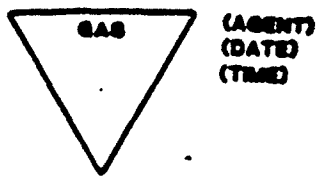
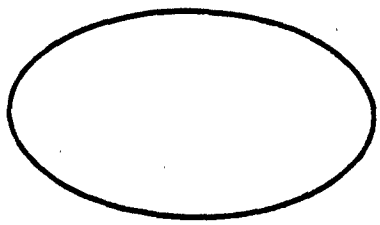



Figure 8. Symbology for nuclear processing.

1. Chemical Marker




2. Chemically Contaminated Area



3. Chemical Hazard Predictor

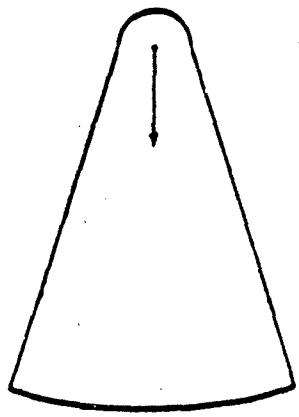


Figure 9. Symbology for chemical processing.

the prompt effects nuclear lethal radii for all nuclear events shall be controlled by the Nuclear Prompt Effects buttoh on the Master Menu. The prompt effects radii shall be displayed in white. The display shall be available throughout the exercise once a nuclear blast has occurred, provided lethality for the target types still exists. Refer to Figure 8 for a sample layout of the display.

3.3.1.2 Radiation Contours - The CIS operator shall be able to turn on radiation contours to depict areas contaminated due to fallout and induced radiation. The contours shall be displayed in white and shall indicate the following dose rate levels: 1 rad/hr, 20 rad/hr, 100 rad/hr, 300 rad/hr and 1,000 rad/hr. These contours shall be updated once every two minutes to reflect changes in the radiation intensities and shall always be available for display throughout the exercise provided the minimum dose rate level still exists. In the event of multiple fallout events, the nuclear model shall provide integrated contours, when applicable. A maximum of three sets of contours shall be displayed for any one history. Refer to Figure 8 for a sample layout of the display.

The Radiation Contours button on the Master Menu shall control the display of all fallout contours.

3.3.1.3 Fallout Prediction Display - The Fallout Prediction display shall be drawn based upon the data provided by the nuclear model. It shall be calculated once a nuclear event has been defined and shall be displayed throughout the exercise unless the event is cancelled. If a nuclear event is cancelled, the Fallout Prediction display for that event shall no longer be available. If a nuclear event is changed, the Fallout Prediction display shall be recalculated and displayed. An example of the display is provided in Figure 8.

The operator shall control the display of all Fallout Prediction displays through a button on the Master Menu.

3.3.1.4 Chemically Contaminated Area - The CIS operator shall be able to turn on the Chemically Contaminated Area display. This area shall be displayed as a transparent yellow area, and shall be updated to reflect changes in the boundaries of the contaminated area. Refer to Figure 9 for a sample layout of the display.

The Chemically Contaminated Area button on the Master Menu shall control the display of the area.

3.3.1.5 Chemical Alarm - A capability shall be provided which allows for a chemical alarm to be associated with an existing instrumented or uninstrumented player. Generally,

uninstrumented chemical alarms shall be emplaced alarms, while instrumented alarms shall be attached to a wheeled vehicle.

The Chemical Alarm button on the Master Menu shall cause a yellow "X" to be displayed next to the associated player symbol. This button shall cause all players who have chemical alarms associated with them to be displayed regardless of other player display selections.

3.3.1.6 Chemical Hazard Prediction Display - The Chemical Hazard Prediction display shall be drawn based upon the data provided by the chemical model. It shall be calculated once a chemical event has been defined and shall remain static throughout the exercise. If a chemical event is cancelled, the Chemical Hazard Prediction display for that event shall no longer be available. The operator shall control the display of all Chemical Hazard Prediction displays through a button on the Master Menu. An example of the display is provided in Figure 9.

3.3.1.7 Contaminated Players - Players contaminated with nuclear radiation (i.e., a player whose radiation dose rate is higher than the dose rate that results from his surroundings and is greater than 1 rad/hr) shall be outlined on the graphic display with a yellow box. The box shall be displayed for both live and killed players and shall be removed from a player's display following decontamination procedures specified in the Decontamination interactive menu.

The Nuclear Contaminated Players button on the Master Menu shall be used to control the display of the nuclear contamination boxes.

Chemically contaminated players (i.e., players who have entered a chemically contaminated area and have not been decontaminated) shall be outlined on the graphic display with a dashed-line yellow box. The box shall be displayed for both live and killed players and shall be removed from a player's display following decontamination procedures specified in the Decontamination interactive menu.

The Chemically Contaminated Players button on the Master Menu shall be used to control the display of the chemical contamination boxes.

3.3.1.8 Nuclear Casualties - A Nuclear Combat Loss button shall be added to Master Menu 1 and Master Menu 2. This button shall be used to control the display of players who were killed through the Player Kill interactive menu as a result of a nuclear event. If this button is on, those players who have been killed by nuclear effects shall be displayed with a black shroud. If this button is off, players who have been killed by nuclear effects shall not be

displayed. Display of players who are killed by controller gun for nuclear effects shall not be affected by this button.

3.3.1.9 Control Measures - The CIS displays shall be capable of showing both the actual nuclear environment (via radiation contours) and the nuclear environment as marked in the field. CIS operators shall enter radiological markers as they are called in from the field by using the Control Measure menu. The Radiological Marker control measure is shown in Figure 8.

In addition, both the actual chemical environment (via the Chemically Contaminated Area display) and the chemical environment as it is marked on the field shall be capable of display by the CIS. Chemical markers shall be entered by CIS operators as they are called in from the field (via the Control Measure menu). The Chemical Marker control measure is shown in Figure 9.

3.3.1.10 Master Menu - The Master Menu used for the 500 Player CIS shall be updated to include buttons to control the following additional features for NBC processing:

- Nuclear Combat Loss
- Nuclear, Chemical, and Biological Category Alerts
- Nuclear Prompt Effects Display
- Nuclear Contaminated Players Display
- Fallout Prediction Display
- Radiation Contours Display
- Chemically Contaminated Area Display
- Chemically Contaminated Players Display
- Chemical Alarms Display
- Downwind Hazard Display

Figure 10 depicts the new graphics tablet required for incorporating nuclear and chemical processing into the CIS.

3.3.1.11 Interactive Menus The existing CIS Control Measures menu shall be updated to incorporate new requirements for nuclear and chemical processing. In addition, the existing Exercise Segment Definition interactive menu shall be updated to allow for the definition of an NBC segment, the Player Kill interactive menu shall be updated to allow for nuclear kills from the CIS, and the Player Resurrect

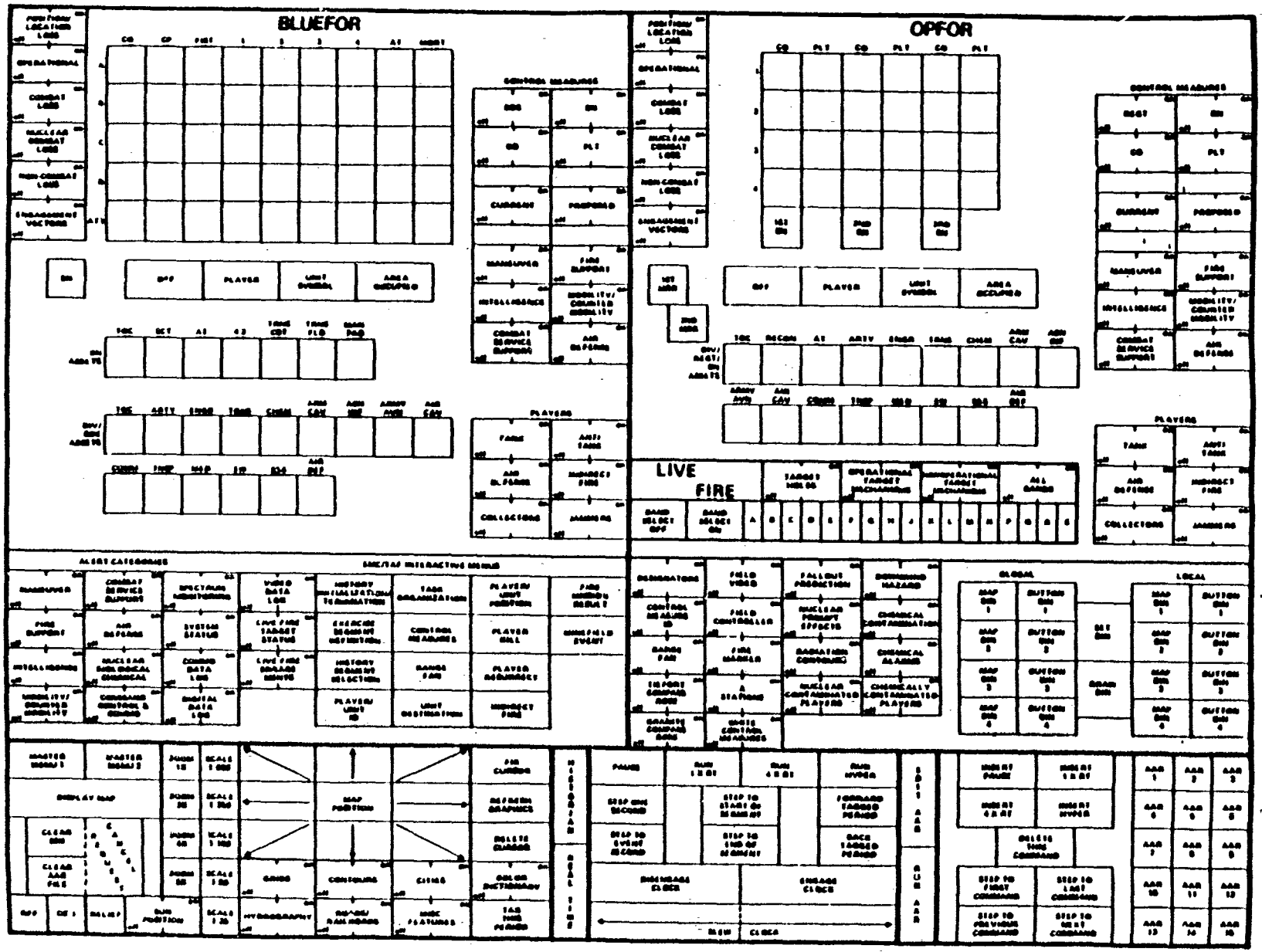



Figure 10. Graphics tablet layout.

interactive menu shall be updated to include nuclear radiation status on resurrected players. Menu descriptions for these menus are contained in Figures 11 through 14.

3.3.2 Alphanumeric Displays

3.3.2.1 Menus - The CIS shall provide the following new interactive menus at the support displays during nuclear and chemical exercise segments:

- Nuclear Event Definition
- Chemical Event Definition
- Nuclear Mission Result
- Chemical Mission Result
- Decontamination
- Player/Unit Posture
- Chemical Alarm Assignment

Menu descriptions are contained in Figures 15 through 21. All menus shall be designed to be compatible with the operation of the current CIS menus and shall utilize the same set of display primitives defined in the CIS 500 Player RDS.

3.3.2.2 Alerts - Display of all nuclear and chemical casualty alerts during an NBC exercise segment shall be controlled by the Nuclear, Biological and Chemical Alert category button on the Master Menu. The following alerts shall be generated:

- Nuclear Event Warning

  [Time] : [Force] : NUCLEAR EVENT SCHEDULED
  TO OCCUR AT : [Time of Burst] : [Ground Zero] :
  [Height of Burst] : [Yield]

- Nuclear Event Cancellation

  [Time] : NUCLEAR EVENT [Event ID] : CANCELLED

- Prompt Nuclear Effects Casualty Recommendation

  [Time] : [Unit] : PROMPT NUCLEAR EFFECTS
  PARTICIPANT CASUALTIES : OPEN [NNN%] APC [NNN%]
  TNK [NNN%] WHEELED VEHICLE [NNN%] FOXHOLE [NNN%]
  EARTH SHELTER [NNN%]
  PLAYER KILLS : [Player ID]; [Player ID] . . .
  EQUIPMENT CASUALTIES : IN USE [NNN%] OFF [NNN%]

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | HISTORY | List consisting of the names of the available histories. | Defines selection of history for which segments will be opened. Current segment (if any) will automatically be closed. |
| 2 | List | TYPE | NULL<br>REAL | Defines menu display options. |
| IF NULL: | | | | |
| 3 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF REAL: | | | | |
| 3 | List | TYPE | ENGAGEMENT SIMULATION SEGMENT<br>LIVE FIRE SEGMENT | Specifies whether the segment involves Engagement Simulation, or the use of Live Fire. |
| IF ENGAGEMENT SIMULATION: | | | | |
| 4 | Numeric Entry | DATE | 6 spaces to be filled in from Numeric pad. | Specifies day/month/year of exercise segment. |
| 5 | List | NUCLEAR/CHEMICAL OPTION | INCLUDE BOTH NUCLEAR AND CHEMICAL CAPABILITIES<br>INCLUDE ONLY NUCLEAR CAPABILITIES<br>INCLUDE ONLY CHEMICAL CAPABILITIES<br>EXCLUDE BOTH NUCLEAR AND CHEMICAL CAPABILITIES | Specifies if nuclear and/or chemical capabilities are to be utilized. |

Figure 11. Menu: Exercise segment definition.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF INCLUDE BOTH NUCLEAR AND CHEMICAL CAPABILITIES: | | | | |
| 6 | List | CONTINUATION OF RADIATION AND/OR CHEMICAL CONTAMINATION | CONTINUE BOTH NUCLEAR RADIATION AND CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT<br>CONTINUE ONLY NUCLEAR RADIATION FROM PREVIOUS SEGMENT<br>CONTINUE ONLY CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT<br>NO CONTINUATION FROM PREVIOUS SEGMENT | Specifies if nuclear radiation and/or chemical contamination shall be continued from previous exercise segment. |
| IF CONTINUE BOTH RADIATION AND CHEMICAL CONTAMINATION, ONLY RADIATION, OR ONLY CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT: | | | | |
| 7 | Numeric Entry | NULL SEGMENT TIME INTERVAL | 5 spaces to be filled in from Numeric pad. | Specifies a length of time radiation/chemical contamination shall accumulate for preceding null segment; in the format HH:MM. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 8 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |
| 9 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 10 | Numeric Entry | INTENSITY INDEX CODE | BLUE OPFOR<br>PLANNING TIME<br>AVAIL -- --<br>FIRE SUPPORT -- --<br>ARTILLERY -- --<br>MORTAR -- --<br>NUCLEAR -- --<br>CHEMICAL -- --<br>BIOLOGICAL -- --<br>SMOKE -- --<br>AIR DEFENSE -- --<br>ENGINEER -- --<br>EW -- -- | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |
| 11 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 12 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 13 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br>1 = Day<br>0 = Night |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 14 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |
| 15 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 16 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 17 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |
| 18 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 19 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 20 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |
| 21 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 22 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion, operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 23 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 24 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and Elements of Information (EI) number assignments are to be made. |
| 25 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 26 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 27 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 21 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 22 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 23 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 24 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 25 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF NO CONTINUATION OF RADIATION OR CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT: | | | | |
| 7 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |
| 8 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 9 | Numeric Entry | INTENSITY INDEX CODE | BLUE OPFOR<br>PLANNING TIME<br>AVAIL -- --<br>FIRE SUPPORT -- --<br>ARTILLERY -- --<br>MORTAR -- --<br>NUCLEAR -- --<br>CHEMICAL -- --<br>BIOLOGICAL -- --<br>SMOKE -- --<br>AIR DEFENSE -- --<br>ENGINEER -- --<br>EW -- -- | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |
| 10 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 11 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br><br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 12 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br><br>1 = Day<br>0 = Night |
| 13 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |
| 14 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 15 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 16 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 17 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 18 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |
| 19 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 20 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |
| 21 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 22 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 23 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 24 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 25 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 26 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 20 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 21 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 22 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 23 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 24 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF INCLUDE ONLY NUCLEAR CAPABILITIES OR IF INCLUDE ONLY CHEMICAL CAPABILITIES: | | | | |
| 6 | List | CONTINUATION OF RADIATION/CHEMICAL CONTAMINATION | CONTINUE RADIATION/CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT<br>NO CONTINUATION OF RADIATION/CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT | Specifies if radiation/chemical contamination shall be continued from previous segment. |
| IF CONTINUE RADIATION/ CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT: | | | | |
| 7 | Numeric Entry | NULL SEGMENT TIME INTERVAL | 5 spaces to be filled in from Numeric pad. | Specifies a length of time radiation/chemical contamination shall continue for preceding null segment; in the format HH:MM. |
| 8 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 9 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 10 | Numeric Entry | INTENSITY INDEX CODE | BLUE OPFOR<br>PLANNING TIME AVAIL -- --<br>FIRE SUPPORT -- --<br>ARTILLERY -- --<br>MORTAR -- --<br>NUCLEAR -- --<br>CHEMICAL -- --<br>BIOLOGICAL -- --<br>SMOKE -- --<br>AIR DEFENSE -- --<br>ENGINEER -- --<br>EW -- -- | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |
| 11 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 12 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 13 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br>1 = Day<br>0 = Night |
| 14 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 15 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 16 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 17 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned attached units in format A -XXX. Up to 8 units may be identified. |
| 18 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 19 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 20 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |
| 21 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 22 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 23 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 24 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 25 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 26 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 27 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 21 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 22 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 23 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 24 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 25 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF NO CONTINUATION OF RADIATION/ CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT: | | | | |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 7 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |
| 8 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 9 | Numeric Entry | INTENSITY INDEX CODE | BLUE OPFOR<br>PLANNING TIME -- --<br>AVAIL -- --<br>FIRE SUPPORT -- --<br>ARTILLERY -- --<br>MORTAR -- --<br>NUCLEAR -- --<br>CHEMICAL -- --<br>BIOLOGICAL -- --<br>SMOKE -- --<br>AIR DEFENSE -- --<br>ENGINEER -- --<br>EW -- -- | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |
| 10 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 11 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 12 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br>1 = Day<br>0 = Night |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 13 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |
| 14 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 15 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 16 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |
| 17 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 18 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 19 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |
| 20 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 21 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 22 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 23 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 24 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 25 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 26 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 20 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 21 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 22 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 23 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 24 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF EXCLUDE BOTH NUCLEAR AND CHEMICAL CAPABILITIES: | | | | |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 6 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |
| 7 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 8 | Numeric Entry | INTENSITY INDEX CODE | BLUE OPFOR<br>PLANNING TIME AVAIL -- --<br>FIRE SUPPORT -- --<br>ARTILLERY -- --<br>MORTAR -- --<br>NUCLEAR -- --<br>CHEMICAL -- --<br>BIOLOGICAL -- --<br>SMOKE -- --<br>AIR DEFENSE -- --<br>ENGINEER -- --<br>EW -- -- | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |
| 9 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 10 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 11 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br>1 = Day<br>0 = Night |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 12 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |
| 13 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 14 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 15 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |
| 16 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 17 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 18 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |
| 19 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 20 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 21 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 22 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 23 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 24 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 25 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 19 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 20 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 21 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 22 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 23 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF LIVE FIRE: | | | | |
| 4 | Alpha/ Numeric Entry | PASSWORD | 4 spaces to be filled in from Alpha/Numeric pad. | Knowledge of the Live Fire password allows user to define segment. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 5 | List | LIVE FIRE SCENARIO DESIGNATOR | List consisting of the names of the available Live Fire scenarios. | Specifies which Live Fire scenario shall control the targets during current segment. Workspace shall be a choice if operator has edited a scenario. |
| 6 | Numeric Entry | DATE | 6 spaces to be filled in from Numeric pad. | Specifies day/month/year of exercise segment. |
| 7 | List | NUCLEAR/CHEMICAL OPTION | INCLUDE BOTH NUCLEAR AND CHEMICAL CAPABILITIES<br>INCLUDE ONLY NUCLEAR CAPABILITIES<br>INCLUDE ONLY CHEMICAL CAPABILITIES<br>EXCLUDE BOTH NUCLEAR AND CHEMICAL CAPABILITIES | Specifies if nuclear and/or chemical capabilities are to be utilized. |
| IF INCLUDE BOTH NUCLEAR AND CHEMICAL CAPABILITIES: | | | | |
| 8 | List | CONTINUATION OF RADIATION AND/OR CHEMICAL CONTAMINATION | CONTINUE BOTH NUCLEAR RADIATION AND CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT<br>CONTINUE ONLY NUCLEAR RADIATION FROM PREVIOUS SEGMENT<br>CONTINUE ONLY CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT<br>NO CONTINUATION OF RADIATION OR CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT | Specifies if nuclear radiation and/or chemical contamination shall be continued from previous exercise segment. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF CONTINUE BOTH RADIATION AND CHEMICAL CONTAMINATION, ONLY RADIATION, OR ONLY CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT: | | | | |
| 9 | Numeric Entry | NULL SEGMENT TIME INTERVAL | 5 spaces to be filled in from Numeric pad. | Specifies a length of time radiation/chemical contamination shall accumulate from preceding null segment; in the format HH:MM. |
| 10 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |
| 11 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 12 | Numeric Entry | INTENSITY INDEX CODE | BLUE / OPFOR<br>PLANNING TIME AVAIL __ / __<br>FIRE SUPPORT __ / __<br>ARTILLERY __ / __<br>MORTAR __ / __<br>NUCLEAR __ / __<br>CHEMICAL __ / __<br>BIOLOGICAL __ / __<br>SMOKE __ / __<br>AIR DEFENSE __ / __<br>ENGINEER __ / __<br>EW __ / __ | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 13 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 14 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 15 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br>1 = Day<br>0 = Night |
| 16 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |
| 17 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 18 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 19 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |

Figure 11. Menu- Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 20 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 21 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |
| 22 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 23 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |
| 24 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 25 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 26 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 27 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 28 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 29 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 23 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 24 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 25 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 26 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 27 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF NO CONTINUATION OF RADIATION OR CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT: | | | | |
| 9 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |
| 10 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 11 | Numeric Entry | INTENSITY INDEX CODE | BLUE OPFOR<br>PLANNING TIME AVAIL __ __<br>FIRE SUPPORT __ __<br>ARTILLERY __ __<br>MORTAR __ __<br>NUCLEAR __ __<br>CHEMICAL __ __<br>BIOLOGICAL __ __<br>SMOKE __ __<br>AIR DEFENSE __ __<br>ENGINEER __ __<br>EW __ __ | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 12 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 13 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 14 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br>1 = Day<br>0 = Night |
| 15 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |
| 16 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 17 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 18 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 19 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 20 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |
| 21 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 22 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |
| 23 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 24 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 25 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 26 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 27 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 28 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 22 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 23 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 24 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 25 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 26 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF INCLUDE ONLY NUCLEAR CAPABILITIES OR IF INCLUDE ONLY CHEMICAL CAPABILITIES: | | | | |
| 8 | List | CONTINUATION OF RADIATION/CHEMICAL CONTAMINATION | CONTINUE RADIATION/CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT<br>NO CONTINUATION OF RADIATION/CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT | Specifies if radiation/chemical contamination shall be continued from previous segment. |
| IF CONTINUE RADIATION/ CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT: | | | | |
| 9 | Numeric Entry | NULL SEGMENT TIME INTERVAL | 5 spaces to be filled in from Numeric pad. | Specifies a length of time radiation/chemical contamination shall continue for preceding null segment; in the format HH:MM. |
| 10 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 11 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 12 | Numeric Entry | INTENSITY INDEX CODE | BLUE / OPFOR<br>PLANNING TIME AVAIL -- --<br>FIRE SUPPORT -- --<br>ARTILLERY -- --<br>MORTAR -- --<br>NUCLEAR -- --<br>CHEMICAL -- --<br>BIOLOGICAL -- --<br>SMOKE -- --<br>AIR DEFENSE -- --<br>ENGINEER -- --<br>EW -- -- | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |
| 13 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 14 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 15 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br>1 = Day<br>0 = Night |
| 16 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 17 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 18 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 19 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |
| 20 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 21 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 22 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |
| 23 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 24 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 25 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 26 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 27 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 28 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 29 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 23 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 24 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 25 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 26 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 27 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF NO CONTINUATION OF RADIATION/ CHEMICAL CONTAMINATION FROM PREVIOUS SEGMENT: | | | | |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 9 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |
| 10 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 11 | Numeric Entry | INTENSITY INDEX CODE | BLUE OPFOR<br>PLANNING TIME AVAIL -- --<br>FIRE SUPPORT -- --<br>ARTILLERY -- --<br>MORTAR -- --<br>NUCLEAR -- --<br>CHEMICAL -- --<br>BIOLOGICAL -- --<br>SMOKE -- --<br>AIR DEFENSE -- --<br>ENGINEER -- --<br>EW -- -- | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |
| 12 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 13 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 14 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br><br>1 = Day<br>0 = Night |
| 15 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |
| 16 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 17 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 18 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |
| 19 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 20 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |
| 21 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |
| 22 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 23 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 24 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 25 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 26 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 27 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 28 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 22 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 23 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 24 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 25 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 26 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF EXCLUDE BOTH NUCLEAR AND CHEMICAL CAPABILITIES: | | | | |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 8 | Numeric Entry | BLUEFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of BLUEFOR scenario. |
| 9 | Numeric Entry | OPFOR SCENARIO # | 2 spaces to be filled in from Numeric pad. | Specifies 2 digit code number of OPFOR scenario. |
| 10 | Numeric Entry | INTENSITY INDEX CODE | BLUE OPFOR<br>PLANNING TIME AVAIL -- --<br>FIRE SUPPORT -- --<br>ARTILLERY -- --<br>MORTAR -- --<br>NUCLEAR -- --<br>CHEMICAL -- --<br>BIOLOGICAL -- --<br>SMOKE -- --<br>AIR DEFENSE -- --<br>ENGINEER -- --<br>EW -- -- | Specifies intensity index code where:<br>1 = Low<br>2 = Medium<br>3 = High |
| 11 | Alpha/ Numeric Entry | KEY TRAINING OBJECTIVE CODE # | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies five 2 character codes. |
| 12 | Numeric Entry | VISIBILITY CODE | 1 space to be filled in from Numeric pad. | Specifies visibility code where:<br>1 = Clear<br>2 = Dust<br>3 = Fog<br>4 = Rain |
| 13 | Numeric Entry | DAY/NIGHT CODE | 1 space to be filled in from Numeric pad. | Specifies day/night code where:<br>1 = Day<br>0 = Night |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 14 | Alpha/ Numeric Entry | Bn DESIGNATION | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies Battalion designation in format X-XXXAAA. |
| 15 | Numeric Entry | Bn DAY AT NTC | 2 spaces to be filled in from Numeric pad. | Specifies number of days spent so far at NTC. |
| 16 | Numeric Entry | Bn TIMES THROUGH INDICATED SCENARIO | 2 spaces to be filled in from Numeric pad. | Specifies number of times this unit has run through this scenario. |
| 17 | Alpha/ Numeric Entry | ASSIGNED/ATTACHED UNITS | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies designation of assigned/attached units in format AAX-XXX. Up to 8 units may be identified. |
| 18 | List | TYPE OF Bn OPERATION/MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Reconnaissance in force<br>06 Raid<br>11 Defend in sector<br>12 Defend from a battle area<br>13 Delay in sector<br>14 Delay forward of a specified line for specified time<br>15 Disengagement<br>16 Counterattack | Specifies tactical mission assigned to Battalion for exercise segment. |
| 19 | List | Bn OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to Bn mission. Selection of modifier is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 20 | List | SELECT UNIT FOR ASSIGNMENT OF COMPANY MISSION CODE | List of assigned/attached units previously identified for which company operation/mission codes shall be defined. | Specifies unit for which company mission codes shall be defined. Up to 8 units may be selected, with company mission codes being requested for each selected unit. Selection of a unit is optional. |
| IF COMPANY MISSION CODES ARE ASSIGNED: | | | | |
| 21 | List | COMPANY MISSION CODE | 01 Movement to contact<br>02 Hasty attack<br>03 Deliberate attack<br>04 Exploitation and pursuit<br>05 Raid<br>11 Occupy a battle position<br>12 Hasty defense<br>13 Deliberate defense<br>14 Defend to retain a battle position<br>15 Create and defend a strongpoint (deliberate defense)<br>21 Patrol operations | Specifies tactical mission assigned to selected company for exercise segment. Selection of company mission code is optional. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 22 | List | COMPANY OPERATIONS MODIFIER CODE | 01 Passage of lines<br>02 Hasty attack<br>03 Relief in place<br>04 Exploitation and pursuit<br>05 Road march<br>06 Occupation of assembly area | Specifies modification to tactical mission of selected company. Selection of modifier is optional. Upon entry completion operator prompted to select next assigned/attached unit for assignment of company mission code. This procedure is repeated until all assigned/attached units have been assigned a company mission code or until the operator does not select an available assigned/attached unit for assignment of a company mission code. |
| 23 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 24 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 25 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 26 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |

Figure 11. Menu: Exercise segment definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 27 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |
| IF COMPANY MISSION CODES ARE NOT ASSIGNED: | | | | |
| 21 | List | STATISTICAL UNITS | List of all BLUEFOR and OPFOR player units currently identified in system data base. | Specifies units for which statistics shall be collected/maintained during the exercise segment. |
| 22 | List | OC ASSESSMENT | "BLUEFOR" followed by a list of all BLUEFOR units (both player and no-player) currently identified in system data base. | Specifies units for which OC assessor ID and EI number assignments are to be made. |
| 23 | Alpha/ Numeric Entry | OC ID | 3 spaces to contain entries from Alpha/Numeric pad. | Specifies ID of OC to perform assessment of BLUEFOR unit selected above. |
| 24 | Numeric Entry | EI NUMBERS | 3 spaces to contain entries from Numeric pad. | Specifies EI numbers assigned to unit for later assessments. Up to 10 EI numbers may be assigned. |
| 25 | List | --- --- | IGNORE<br>DONE | Specifies manner of entry completion. |

Figure 11. Menu: Exercise segment definition (concluded).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | ACTION | ADD<br>DELETE<br>ASSIGN CURRENT STATUS | Defines action to be performed. |
| 2 | List | FORCE | BLUEFOR<br>OPFOR<br>WHITE | Defines menu display options. |
| IF BLUEFOR/ OPFOR ADD: | | | | |
| 3 | List | TACTICAL CATEGORY | MANEUVER<br>FIRE SUPPORT<br>INTELLIGENCE<br>MOBILITY/COUNTER-MOBILITY<br>COMBAT SERVICE SUPPORT<br>AIR DEFENSE | Defines selection of functional tactical category of control measure. More than one tactical category may be selected. |
| 4 | List | ECHELON | IF BLUEFOR: PLT, CO, BN, BDE<br>IF OPFOR: PLT, CO, BN, REGT | Defines selection of echelon of control measure. |
| 5 | List | TYPE | POINT<br>LINE<br>AREA | Defines selection of type of control measure. |

Figure 12. Menu: Control measures.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF POINT: | | | | |
| 6 | List | CONTROL MEASURE | CHECKPOINT<br>COORDINATION POINT<br>START POINT<br>RELEASE POINT<br>PASSAGE POINT<br>POINT OF DEPARTURE<br>REMOTE SENSOR<br>PREPLANNED TARGET<br>RADIOLOGICAL MARKER<br>CHEMICAL MARKER | Defines selection of point to be created. |
| IF CHECK POINT, COORDINATION POINT, START POINT, RELEASE POINT, PASSAGE POINT, POINT OF DEPARTURE, REMOTE SENSOR, PREPLANNED TARGET: | | | | |
| 7 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator to be assigned to control measure. Entry of a name is optional. |
| 8 | Area | CHOOSE POINT ON MAP | --- --- | Cursor position on map defines selected point. |
| 9 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF RADIOLOGICAL MARKER: | | | | |
| 7 | Numeric Entry | DOSE RATE | 4 spaces to be filled in from Numeric pad. | Specifies dose rate of contamination in marked area. |
| 8 | Alpha/ Numeric Entry | MARKER DATE | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies date marker was placed in the field; in the format DDMMMYY. |
| 9 | Numeric Entry | MARKER TIME | 5 spaces to be filled in from Numeric pad. | Specifies time marker was placed in the field; in the format HH:MM. |
| 10 | Alpha/ Numeric Entry | BURST DATE | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies date nuclear blast occurred; in the format DDMMMYY. |
| 11 | Numeric Entry | BURST TIME | 5 spaces to be filled in from Numeric pad. | Specifies time nuclear blast occurred; in the format HH:MM. |
| 12 | Area | CHOOSE POINT ON MAP | --- --- | Cursor position on map defines selected point. |
| 13 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF CHEMICAL MARKER: | | | | |
| 7 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent employed. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 8 | Alpha/ Numeric Entry | MARKER DATE | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies date marker was placed in the field; in the format DDMMMYY. |
| 9 | Numeric Entry | MARKER TIME | 5 spaces to be filled in from Numeric pad. | Specifies time marker was placed in the field; in the format HH:MM. |
| 10 | Area | CHOOSE POINT ON MAP | --- --- | Cursor position on map defines selected point. |
| 11 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF LINE: | | | | |
| 6 | List | CONTROL MEASURE | BASIC LINE<br>AXIS OF ADVANCE<br>PHASE LINE<br>TANK DITCH<br>CONCERTINA<br>DIRECTION OF ATTACK/ROUTE<br>BOUNDARY LINE<br>TRACE OF FEBA<br>FEBA<br>LIMIT OF ADVANCE<br>LINE OF DEPARTURE<br>LD/LC<br>PROBABLE LINE OF DEPLOYMENT<br>FSCL<br>RESTRICTIVE FIRE LINE<br>COORDINATED FIRE LINE<br>MAIN SUPPLY ROUTE<br>PASSAGE LANE | Defines selection of line to be created. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF BASIC LINE, TANK DITCH, PHASE LINE, AXIS OF ADVANCE, CONCERTINA, OR MAIN SUPPLY ROUTE: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator to be assigned to control measure. Entry of name is optional. |
| 9 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected point. |
| 10 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF DIRECTION OF ATTACK/ ROUTE: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator to be assignd to control measure. Entry of name is optional. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 9 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP. LAST POSITION INDICATES DIRECTION. | --- --- | Cursor positions on map define selected points. Last position indicates direction. |
| 10 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF BOUNDARY LINE: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | List | UNIT DESIGNATION | A list of all BLUEFOR or OPFOR player units previously created by the operator. | Defines selection of unit designation associated with this control measure. Selection of unit designation is optional. |
| 9 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 10 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF TRACE OF FEBA, LIMIT OF ADVANCE, LINE OF DEPARTURE: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 9 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF LD/LC, FEBA, PASSAGE LANE, PROBABLE LINE OF DEPLOYMENT: | | | | |
| 7 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 8 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF FSCL, RFL, CFL: | | | | |
| 7 | Alpha/ Numeric Entry | DATE TIME GROUP | 11 spaces to be filled in from Alpha/Numeric pad. | Specifies time the line becomes effective. |
| 8 | List | UNIT DESIGNATION | A list of all BLUEFOR or OPFOR player units previously created by the operator. | Defines selection of unit designation associated with the control measure. Selection of unit designation is optional. |
| 9 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 10 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF AREA: | | | | |
| 6 | List | CONTROL MEASURE | BASIC AREA<br>AREA OF OPERATION<br>ASSEMBLY AREA<br>ATTACK POSITION<br>DROP ZONE<br>FIRE SUPPORT BASE<br>LANDING ZONE<br>FARP<br>OBJECTIVE<br>PATROL BASE<br>PICKUP ZONE<br>SCATTERABLE MINEFIELD<br>SUPPORT AREA<br>GROUP OF TARGETS<br>RESTRICTIVE FIRE AREA<br>NO FIRE AREA<br>CONTAMINATED AREA<br>BATTLE POSITION<br>MINEFIELD<br>GAP/BRIDGE | Defines area control measure to be created. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IP BASIC AREA, CONTAMINATED AREA, AREA OF OPERATION, ATTACK POSITION, DROP ZONE, FIRE SUPPORT BASE, LANDING ZONE, OBJECTIVE, PATROL BASE, PICKUP ZONE, SUPPORT AREA, BATTLE POSITION: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator or name assigned to control measure. Entry of name is optional. |
| 9 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 10 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF ASSEMBLY AREA: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | List | UNIT DESIGNATION | A list of all BLUEFOR or OPFOR player units previously created by the operator. | Defines selection of unit designation associated with this control measure. Selection of unit designation is optional. |
| 9 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 10 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF PARP: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 9 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF GROUP OF TARGETS: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator or name assigned to control measure. Entry of name is optional. |
| 9 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 10 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF RESTRICT-ED FIRE AREA (RFA): | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | List | UNIT DESIGNATION | A list of all BLUEFOR or OPFOR player units previously created by the operator. | Defines selection of unit designation associated with this control measure. Selection of unit designation is optional. |
| 9 | Alpha/ Numeric Entry | STARTING TIME | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies time the RFA becomes effective; in the format DDHHMM. |
| 10 | Alpha/ Numeric Entry | ENDING TIME | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies time the RFA terminates; in the format DDHHMM. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 11 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 12 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF NO FIRE AREA: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 8 | List | UNIT DESIGNATION | A list of all BLUEFOR or OPFOR player units previously created by the operator. | Defines selection of unit designation associated with this control measure. |
| 9 | Alpha/ Numeric Entry | DATE TIME GROUP | 11 spaces to be filled in from Alpha/Numeric pad. | Specifies time of effect. |
| 10 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 11 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF SCATTERABLE MINEFIELD: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines selection of area to be created. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 8 | Alpha/ Numeric Entry | DATE TIME GROUP | 11 spaces to be filled in from Alpha/Numeric pad. | Specifies day, time, and month of mine self-destruct. |
| 9 | List | MINE TYPE | ANTITANK<br>ANTIPERSONNEL<br>MIXED | Determines mine symbols to be entered within boundaries. |
| 10 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 11 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF GAP/ BRIDGE: | | | | |
| 7 | Area | CHOOSE UP TO SIX POINTS FOR FIRST SIDE OF GAP/BRIDGE | --- --- | Specifies first side of gap/bridge. |
| 8 | Area | CHOOSE UP TO SIX POINTS FOR SECOND SIDE OF GAP/BRIDGE | --- --- | Specifies second side of gap/bridge. |
| 9 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF MINEFIELD: | | | | |
| 7 | List | STATUS | CURRENT<br>PROPOSED | Defines status of area to be created. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 8 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define area. |
| 9 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF BLUEFOR/ OPFOR DELETE: | | | | |
| 3 | List | TACTICAL CATEGORY | MANEUVER<br>FIRE SUPPORT<br>INTELLIGENCE<br>MOBILITY/COUNTER-MOBILITY<br>COMBAT SERVICE SUPPORT<br>AIR DEFENSE | Defines selection of functional tactical category of control measure to be deleted. Only one selection available. |
| 4 | List | ECHELON | IF BLUEFOR: PLT, CO, BN, BDE<br>IF OPFOR: PLT, CO, BN, REGT | Defines selection of echelon of control measure to be deleted. |
| 5 | List | CONTROL MEASURE ID | List of control measure IDs, of all BLUEFOR/OPFOR control measures in system (in accordance with TACTICAL CATEGORY and ECHELON selections made above). | Defines selection of control measures to be deleted. Multiple selections may be made. |
| 6 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF WHITE ADD: | | | | |
| 3 | List | TYPE | POINT<br>LINE<br>AREA | Defines selection of type of control measure. |
| IF POINT: | | | | |
| 4 | List | CONTROL MEASURE | CHECKPOINT<br>COORDINATION POINT<br>START POINT<br>RELEASE POINT<br>PASSAGE POINT<br>POINT OF DEPARTURE<br>REMOTE SENSOR<br>PREPLANNED TARGET<br>RADIOLOGICAL MARKER<br>CHEMICAL MARKER | Defines selection of point to be created. |
| IF CHECK POINT, COORDINATION POINT, START POINT, RELEASE POINT, PASSAGE POINT, POINT OF DEPARTURE, REMOTE SENSOR, PREPLANNED TARGET: | | | | |
| 5 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator to be assigned to control measure. Entry of a name is optional. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 6 | Area | CHOOSE POINT ON MAP | --- --- | Cursor position on map defines selected point. |
| 7 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IP RADIOLOGICAL MARKER: | | | | |
| 5 | Numeric Entry | DOSE RATE | 4 spaces to be filled in from Numeric pad. | Specifies dose rate of contamination in marked area. |
| 6 | Alpha/ Numeric Entry | MARKER DATE | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies date marker was placed in the field; in the format DDMMMYY. |
| 7 | Numeric Entry | MARKER TIME | 5 spaces to be filled in from Numeric pad. | Specifies time marker was placed in the field; in the format HH:MM. |
| 8 | Alpha/ Numeric Entry | BURST DATE | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies date nuclear blast occurred; in the format DDMMMYY. |
| 9 | Numeric Entry | BURST TIME | 5 spaces to be filled in from Numeric pad. | Specifies time nuclear blast occurred; in the format HH:MM. |
| 10 | Area | CHOOSE POINT ON MAP | --- --- | Cursor position on map defines selected point. |
| 11 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF CHEMICAL MARKER: | | | | |
| 5 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent employed. |
| 6 | Alpha/ Numeric Entry | MARKER DATE | 7 spaces to be filled in from Alpha/Numeric pad. | Specifies date marker was placed in the field; in the format DDMMMYY. |
| 7 | Numeric Entry | MARKER TIME | 5 spaces to be filled in from Numeric pad. | Specifies time marker was placed in the field; in the format HH:MM. |
| 8 | Area | CHOOSE POINT ON MAP | --- --- | Cursor position on map defines selected point. |
| 9 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF LINE: | | | | |
| 4 | List | CONTROL MEASURE | BASIC LINE<br>AXIS OF ADVANCE<br>PHASE LINE<br>TANK DITCH<br>CONCERTINA<br>DIRECTION OF ATTACK/ROUTE<br>BOUNDARY LINE<br>TRACE OF FEBA<br>FEBA<br>LIMIT OF ADVANCE<br>LINE OF DEPARTURE<br>LD/LC<br>PROBABLE LINE OF DEPLOYMENT<br>FSCL<br>RESTRICTIVE FIRE LINE<br>COORDINATED FIRE LINE<br>MAIN SUPPLY ROUTE<br>PASSAGE LANE | Defines selection of line to be created. |
| IF BASIC LINE, TANK DITCH, PHASE LINE, AXIS OF ADVANCE, CONCERTINA, MAIN SUPPLY ROUTE: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 6 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator to be assigned to control measure. Entry of the name is optional. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 7 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected point. |
| 8 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF DIRECTION OF ATTACK/ ROUTE: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 6 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator to be assignd to control measure. Entry of name is optional. |
| 7 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP. LAST POSITION INDICATES DIRECTION. | --- --- | Cursor positions on map define selected points. Last position indicates direction. |
| 8 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF BOUNDARY LINE: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 6 | List | UNIT DESIGNATION | A list of all white player units previously created by the operator. | Defines selection of unit designation associated with this control measure. Selection of unit designation is optional. |
| 7 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 8 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF TRACE OF FEBA, LIMIT OF ADVANCE, LINE OF DEPARTURE: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 6 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 7 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF LD/LC, FEBA, PASSAGE LANE, PROBABLE LINE OF DEPLOYMENT: | | | | |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 5 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 6 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF FSCL, RFL, CFL: | | | | |
| 5 | Alpha/ Numeric Entry | DATE TIME GROUP | 11 spaces to be filled in from Alpha/Numeric pad. | Specifies time the line becomes effective. |
| 6 | List | UNIT DESIGNATION | A list of all white player units previously created by the operator. | Defines selection of unit designation associated with the control measure. Selection of unit designation is optional. |
| 7 | Area | CHOOSE TWO TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 8 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF AREA: | | | | |
| 4 | List | CONTROL MEASURE | BASIC AREA<br>AREA OF OPERATION<br>ASSEMBLY AREA<br>ATTACK POSITON<br>DROP ZONE<br>FIRE SUPPORT BASE<br>LANDING ZONE<br>FARP | Defines area control measure to be created. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| | | | OBJECTIVE<br>PATROL BASE<br>PICKUP ZONE<br>SCATTERABLE MINEFIELD<br>SUPPORT AREA<br>GROUP OF TARGETS<br>RESTRICTIVE FIRE AREA<br>NO FIRE AREA<br>CONTAMINATED AREA<br>BATTLE POSITON<br>MINEFIELD<br>GAP/BRIDGE | |
| IF BASIC AREA, CONTAMINATED AREA, AREA OF OPERATION, ATTACK POSITION, DROP ZONE, FIRE SUPPORT BASE, LANDING ZONE, OBJECTIVE, PATROL BASE, PICKUP ZONE, SUPPORT AREA, BATTLE POSITION: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 6 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator name assigned to control measure. Entry of name is optional. |
| 7 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 8 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF ASSEMBLY AREA: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 6 | List | UNIT DESIGNATION | A list of all white player units previously created by the operator. | Defines selection of unit designation associated with this control measure. Selection of unit designation is optional. |
| 7 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 8 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF FARP: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 6 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 7 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF GROUP OF TARGETS: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 6 | Alpha/ Numeric Entry | CODE NAME | 16 spaces to be filled in from Alpha/Numeric pad. | Specifies designator or name assigned to control measure. Entry of name is optional. |
| 7 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 8 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF RFA: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 6 | List | UNIT DESIGNATION | A list of all white player units previously created by the operator. | Defines selection of unit designation associated with this control measure. Selection of unit designation is optional. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 7 | Alpha/ Numeric Entry | STARTING TIME | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies time the RFA becomes effective; in the format DDHHMM. |
| 8 | Alpha/ Numeric Entry | ENDING TIME | 6 spaces to be filled in from Alpha/Numeric pad. | Specifies time the RFA terminates; in the format DDHHMM. |
| 9 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 10 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF NO FIRE AREA: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines status of control measure. |
| 6 | List | UNIT DESIGNATION | A list of all white player units previously created by the operator. | Defines selection of unit designation associated with this control measure. |
| 7 | Alpha/ Numeric Entry | DATE TIME GROUP | 11 spaces to be filled in from Alpha/Numeric pad. | Specifies time of effect. |
| 8 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 9 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF SCATTERABLE MINEFIELD: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines selection of area to be created. |
| 6 | Alpha/ Numeric Entry | DATE TIME GROUP | 11 spaces to be filled in from Alpha/Numeric pad. | Specifies day, time, and month of mine self-destruct. |
| 7 | List | MINE TYPE | ANTITANK<br>ANTIPERSONNEL<br>MIXED | Determines mine symbols to be entered within boundaries. |
| 8 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define selected points. |
| 9 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF GAP/ BRIDGE: | | | | |
| 5 | Area | CHOOSE UP TO SIX POINTS FOR FIRST SIDE OF GAP/BRIDGE | --- --- | Cursor positions on map specify first side of gap/bridge. |
| 6 | Area | CHOOSE UP TO SIX POINTS FOR SECOND SIDE OF GAP/BRIDGE | --- --- | Cursor positions on map specify second side of gap/bridge. |
| 7 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF MINEFIELD: | | | | |
| 5 | List | STATUS | CURRENT<br>PROPOSED | Defines selection of area to be created. |
| 6 | Area | CHOOSE UP TO TWELVE POINTS ON MAP | --- --- | Cursor positions on map define area. |
| 7 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF WHITE DELETE: | | | | |
| 3 | List | CONTROL MEASURE ID | List of control measure IDs of all white control measures. | Defines selection of control measure to be deleted. Multiple selections may be made. |
| 4 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF BLUEFOR/ OPFOR ASSIGN CURRENT STATUS: | | | | |
| 3 | List | TACTICAL CATEGORY | MANEUVER<br>FIRE SUPPORT<br>INTELLIGENCE<br>MOBILITY/COUNTER-MOBILITY<br>COMBAT SERVICE SUPPORT<br>AIR DEFENSE | Defines selection of functional tactical category of proposed control measure to be assigned current status. Only one selection available. |

Figure 12. Menu: Control measures (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 4 | List | ECHELON | IF BLUEFOR: PLT, CO, BN, BDE<br>IF OPFOR: PLT, CO, BN, REGT | Defines selection of echelon of proposed control measure to be assigned current status. Only one selection available. |
| 5 | List | CONTROL MEASURE ID | List of control measure IDs of all proposed control measures in system (in accordance with FORCE, TACTICAL CATEGORY and ECHELON selection made above). | Defines selection of proposed control measures to be assigned current status. Multiple selections may be made. |
| 6 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Defines manner of entry completion. |
| IF WHITE ASSIGN CURRENT STATUS: | | | | |
| 3 | List | CONTROL MEASURE ID | List of control measure IDs of all white proposed control measures in system. | Defines selection of proposed control measures to be assigned current status. Multiple selections may be made. |
| 4 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Defines manner of entry completion. |

Figure 12. Menu: Control measures (concluded).

| DISPLAY GROUP | TYPE | TITLE | | |
|---|---|---|---|---|
| 1 | List | FORCE | BLUEFOR<br>OPFOR | Defines menu display options. |
| 2 | List | TYPE PLAYER | INSTRUMENTED<br>UNINSTRUMENTED | Defines selection of player type. |
| IF UNINSTRU-MENTED: | | | | |
| 3 | List | TYPE OF KILL | COMBAT<br>ADMIN<br>NUCLEAR | Defines display for killed player. |
| 4 | List | PLAYER | List of currently operational (i.e., active) uninstrumented BLUEFOR or OPFOR ground players (in accordance with FORCE selection made above). | Defines selection of uninstrumented ground player to be killed in accordance with type of kill defined above. |
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF INSTRU-MENTED: | | | | |
| 3 | List | TYPE OF KILL | ADMIN<br>NUCLEAR | Defines display for killed player. |
| 4 | List | PLAYER | List of currently operational (i.e., Active) instrumented BLUEFOR or OPFOR players (in accordance with FORCE selection made above). | Defines selection of instrumented player to be killed in accordance with type of kill defined above. |
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 13. Menu: Player kill.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | FORCE | BLUEFOR<br>OPFOR | Defines menu display options. |
| 2 | List | PLAYER TYPE | INSTRUMENTED<br>UNINSTRUMENTED | Defines selection of player type to be resurrected. |
| 3 | List | PLAYER | List of BLUEFOR or OPFOR players currently listed as being either combat, nuclear, combat or non-combat losses (in accordance with FORCE and PLAYER TYPE selections made above). | Defines selection of player to be resurrected. |
| 4 | List | TYPE | RESUPPLY<br>ACCIDENTAL KILL | Specifies radiation status for resurrected player. RESUPPLY shall will reset player's radiation status to zero. ACCIDENTAL KILL shall maintain player's radiation status. |
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 14. Menu: Player resurrect.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | FORCE | BLUEFOR<br>OPFOR | Defines force initiating the nuclear event. |
| 2 | List | ACTION | DEFINE NUCLEAR MISSION<br>EDIT NUCLEAR MISSION<br>CANCEL NUCLEAR MISSION | Defines menu display options. Only 10 nuclear events may be defined; 3 of which may produce fallout. If more than 3 ground bursts are entered, the additional entries shall be executed as air bursts. |
| IF DEFINE NUCLEAR MISSION: | | | | |
| 3 | Alpha/ Numeric Entry | TIME | DDMMMYY<br>_ _:_ _ (current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM values). | Specifies execution date and time of nuclear event. |
| 4 | Alpha/ Numeric Entry | TARGET POINT | 10 spaces to be filled in from Alpha/Numeric pad, | Specifies UTM coordinates of target. |
| 5 | List | YIELD | 0.2 KT<br>1 KT<br>2 KT<br>3 KT<br>5 KT<br>8 KT<br>10 KT<br>20 KT<br>50 KT<br>100 KT | Specifies the yield of the weapon package. |

Figure 15. Menu: Nuclear event definition.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 6 | List | HEIGHT OF BURST | GROUND<br>AIR | Specifies whether the burst will produce fallout. Only 3 ground bursts may be entered. If more than 3 are entered, the additional entries shall be executed as air bursts. |
| 7 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR. Default set to 20 KM/HR. |
| 8 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies the wind direction in degrees (valid range 1 to 360). |
| 9 | Numeric Entry | VISIBILITY | 4 spaces to be filled in from Numeric pad. | Specifies the visibility in kilometers. |
| 10 | Numeric Entry | DOWNWIND DISTANCE TO ZONE 1 | 2 spaces to be filled in from Numeric pad. | Specifies the Downwind distance to zone 1, in kilometers. Used to create Fallout Prediction Display. |
| 11 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 15. Menu: Nuclear event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF EDIT NUCLEAR MISSION: | | | | |
| 3 | List | NUCLEAR MISSION | List of nuclear missions previously defined. | Defines selection of nuclear mission to be updated/modified. Missions shall be identified by time, yield and ground zero.<br><br>NOTE: Upon selection of mission, all parameters describing the nuclear mission are displayed for review. |
| IF CANCEL NUCLEAR MISSION: | | | | |
| 3 | List | NUCLEAR MISSION | List of nuclear missions previously defined. | Defines selection of nuclear mission to be cancelled. Missions shall be identified by time, yield and ground zero. |
| 4 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 15. Menu: Nuclear event definitiCn (concluded).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | FORCE | BLUEFOR<br>OPFOR | Specifies force initiating the chemical event. |
| 2 | List | ACTION | DEFINE CHEMICAL MISSION<br>EDIT CHEMICAL MISSION<br>CANCEL CHEMICAL MISSION | Defines menu display options. |
| IF DEFINE CHEMICAL MISSION: | | | | |
| 3 | List | DELIVERY METHOD | ARTILLERY<br>ROCKET<br>AIR SPRAY<br>AIR DELIVERED BOMBS | Specifies method of delivering chemical agent. |
| IF ARTILLERY: | | | | |
| 4 | List | TYPE OF TARGET | TARGET POINT<br>GROUP OF TARGETS | Defines menu display options. |
| IF TARGET POINT: | | | | |
| 5 | List | IDENTIFY TARGET | NEW TARGET<br>EXISTING TARGET | Specifies whether operator is defining a new target or using a preplanned target for event definition. |
| IF NEW TARGET: | | | | |
| 6 | Alpha/ Numeric Entry | TARGET NUMBER | 5 spaces to be filled in from Alpha/Numeric pad. | Specifies target number. |

Figure 16. Menu: Chemical event definition.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 7 | Alpha/ Numeric Entry | TARGET LOCATION | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies UTM coordinates of target. |
| 8 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 9 | List | FIRING UNIT | List of BLUEFOR or OPFOR firing units identified in system data base. | Defines selection of unit to execute chemical event. |
| 10 | List | WEAPON | BLUEFOR: OPFOR:<br>105 mm 122 mm<br>107 mm 130 mm<br>155 mm 152 mm howitzer<br>175 mm 152 mm gun/how<br>8 " MRL<br>FROG | Defines selection of weapon to be fired. |
| 11 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 12 | List | ROUNDS | BTRY 1 BN 1<br>BTRY 2 BN 2<br>BTRY 3 BN 3<br>BTRY 4 BN 4<br>BTRY 5 BN 5<br>BTRY 6 BN 6<br>BTRY 7 BN 7<br>BTRY 8 BN 8<br>BTRY 9 BN 9<br>BTRY 10 BN 10 | Specifies number of rounds to be delivered. Input is optional. Default set to BTRY 1. |
| 13 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 14 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |
| 15 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 16 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 17 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 18 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__'__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM.) | Specifies execution date and time of chemical mission. |
| 19 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF EXISTING TARGET: | | | | |
| 6 | List | PREPLANNED TARGET | List of targets previously defined and input to the system. | Defines selection of target. NOTE: Upon selection of target, all parameters describing the target are displayed for review. |
| 7 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 8 | List | FIRING UNIT | List of BLUEFOR or OPFOR firing units identified in system data base. | Defines selection of unit to execute chemical event. |
| 9 | List | WEAPON | BLUEFOR: 105 mm, 107 mm, 155 mm, 175 mm, 8 "<br>OPFOR: 122 mm, 130 mm, 152 mm howitzer, 152 mm gun/how, MRL, FROG | Defines selection of weapon to be fired.. |
| 10 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 11 | List | ROUNDS | BTRY 1 BN 1<br>BTRY 2 BN 2<br>BTRY 3 BN 3<br>BTRY 4 BN 4<br>BTRY 5 BN 5<br>BTRY 6 BN 6<br>BTRY 7 BN 7<br>BTRY 8 BN 8<br>BTRY 9 BN 9<br>BTRY 10 BN 10 | Specifies number of rounds to be delivered. Input is optional. Default set to BTRY 1. |
| 12 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |
| 13 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |
| 14 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |

Figure 16. Menu: Chemical event definition (continued)

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 15 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 16 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 17 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM values.) | Specifies execution date and time of chemical mission. |
| 18 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF GROUP OF TARGETS: | | | | |
| 5 | List | IDENTIFY TARGET GROUP | NEW TARGET GROUP<br>EXISTING TARGET GROUP | Specifies whether operator is defining a new target group or using a preplanned target group in event definition. |
| IF NEW TARGET GROUP: | | | | |
| 6 | Alpha/ Numeric Entry | GROUP DESIGNATION | 3 spaces to be filled in from Alpha/Numeric pad. | Specifies designation for group of targets. |
| 7 | List | TARGETS | List of targets previously defined and input to the system. | Specifies targets belonging to group. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 8 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 9 | List | FIRING UNIT | List of BLUEFOR or OPFOR firing units identified system data base. | Defines selection of unit to execute chemical event. |
| 10 | List | WEAPON | BLUEFOR: OPFOR:<br>105 mm 122 mm<br>107 mm 130 mm<br>155 mm 152 mm howitzer<br>175 mm 152 mm gun/how<br>8 " MRL<br>FROG | Defines selection of weapon to be fired. |
| 11 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 12 | List | ROUNDS | BTRY 1 BN 1<br>BTRY 2 BN 2<br>BTRY 3 BN 3<br>BTRY 4 BN 4<br>BTRY 5 BN 5<br>BTRY 6 BN 6<br>BTRY 7 BN 7<br>BTRY 8 BN 8<br>BTRY 9 BN 9<br>BTRY 10 BN 10 | Specifies number of rounds to be delivered. Input is optional. Default set to BTRY 1. |
| 13 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |
| 14 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 15 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 16 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 17 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 18 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM). | Specifies execution date and time of chemical mission. |
| 19 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF EXISTING TARGET GROUP: | | | | |
| 6 | List | GROUP OF TARGETS | List of groups of targets previously defined and input to the system. | Defines selection of Group of Targets. Upon selection of Group of Targets, all parameters describing the Group are displayed for review. |
| 7 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 8 | List | FIRING UNIT | List of BLUEFOR or OPFOR firing units identified in system data base. | Defines selection of unit to execute chemical event. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 9 | List | WEAPON | BLUEFOR: 105 mm, 107 mm, 155 mm, 175 mm, 8 "<br>OPFOR: 122 mm, 130 mm, 152 mm howitzer, 152 mm gun/how, MRL, FROG | Defines selection of weapon to be fired. |
| 10 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 11 | List | ROUNDS | BTRY 1 BN 1<br>BTRY 2 BN 2<br>BTRY 3 BN 3<br>BTRY 4 BN 4<br>BTRY 5 BN 5<br>BTRY 6 BN 6<br>BTRY 7 BN 7<br>BTRY 8 BN 8<br>BTRY 9 BN 9<br>BTRY 10 BN 10 | Specifies number of rounds to be delivered. Input is optional. Default set to BTRY 1. |
| 12 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |
| 13 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |
| 14 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 15 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 16 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 17 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM values.) | Specifies execution date and time of chemical mission. |
| 18 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF ROCKET: | | | | |
| 4 | List | TYPE OF TARGET | TARGET POINT<br>GROUP OF TARGETS | Defines menu display options. |
| IF TARGET POINT: | | | | |
| 5 | List | IDENTIFY TARGET | NEW TARGET<br>EXISTING TARGET | Specifies whether operator is defining a new target or using a preplanned target for event definition. |
| IF NEW TARGET: | | | | |
| 6 | Alpha/ Numeric Entry | TARGET NUMBER | 5 spaces to be filled in from Alpha/Numeric pad. | Specifies target number. |
| 7 | Alpha/ Numeric Entry | TARGET LOCATION | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies UTM coordinates of target. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 8 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 9 | List | FIRING UNIT | List of OPFOR firing units identified in system data base. | Defines selection of unit to execute chemical event. |
| 10 | Numeric Entry | NUMBER OF ROCKETS | 2 spaces to be filled in from Numeric pad. | Specifies the number of rockets to be delivered during chemical event. |
| 11 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 12 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |
| 13 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |
| 14 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 15 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 16 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 17 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY __:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM.) | Specifies execution date and time of chemical mission. |
| 18 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF EXISTING TARGET: | | | | |
| 6 | List | PREPLANNED TARGET | List of targets previously defined and input to the system. | Defines selection of target. NOTE: Upon selection of target, all paramaters describing the target are displayed for review. |
| 7 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 8 | List | FIRING UNIT | List of OPFOR firing units identified in system data base. | Defines selection of unit to execute chemical event. |
| 9 | Numeric Entry | NUMBER OF ROCKETS | 2 spaces to be filled in from Numeric pad. | Specifies the number of rockets to be delivered during chemical event. |
| 10 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 11 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 12 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |
| 13 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 14 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 15 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 16 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM values.) | Specifies execution date and time of chemical mission. |
| 17 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF GROUP OF TARGETS: | | | | |
| 5 | List | IDENTIFY TARGET GROUP | NEW TARGET GROUP<br>EXISTING TARGET GROUP | Specifies whether operator is defining a new target group or using a preplanned target group in event definition. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF NEW TARGET GROUP: | | | | |
| 6 | Alpha/ Numeric Entry | GROUP DESIGNATION | 3 spaces to be filled in from Alpha/Numeric pad. | Specifies designation for group of targets. |
| 7 | List | TARGETS | List of targets previously defined and input to the system. | Specifies targets belonging to group. |
| 8 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 9 | List | FIRING UNIT | List of OPPOR firing units identified in system data base. | Defines selection of unit to execute chemical event. |
| 10 | Numeric Entry | NUMBER OF ROCKETS | 2 spaces to be filled in from Numeric pad. | Specifies the number of rockets to be delivered during chemical event. |
| 11 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 12 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |
| 13 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |
| 14 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 15 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 16 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 17 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM). | Specifies execution date and time of chemical mission. |
| 18 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF EXISTING TARGET GROUP: | | | | |
| 6 | List | GROUP OF TARGETS | List of groups of targets previously defined and input to the system. | Defines selection of Group of Targets. NOTE: Upon selection of Group of Targets, all parameteres describing the Group are displayed for review. |
| 7 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 8 | List | FIRING UNIT | List of OPFOR firing units identified in system data base. | Defines selection of unit to execute chemical event. |
| 9 | Numeric Entry | NUMBER OF ROCKETS | 2 spaces to be filled in from Numeric pad. | Specifies the number of rockets to be delivered during chemical event. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 10 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 11 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |
| 12 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |
| 13 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 14 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 15 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 16 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM values.) | Specifies execution date and time of chemical mission. |
| 17 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| IF AIR SPRAY: | | | | |
| 4 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 5 | Numeric Entry | TOTAL SPRAY TANKS IN SORTIE | 1 space to be filled in from Numeric pad. | Specifies the total amount of chemical agent to be employed in chemical event. Each tank holds 30 gallons. |
| 6 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE | Specifies type of agent being employed.. |
| 7 | Alpha/ Numeric Entry | TARGET CENTER | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies UTM coordinates of target center. |
| 8 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |
| 9 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |
| 10 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 11 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 12 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 13 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY __:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM.) | Specifies execution date and time of chemical mission. |
| 14 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF AIR DELIVERED BOMBS: | | | | |
| 4 | Alpha/ Numeric Entry | TARGET CENTER | 10 spaces to be filled in from Alpha/Numeric pad. | Specifies UTM coordinates of target center. |
| 5 | List | TYPE OF ATTACK | CASUALTY<br>OBSTACLE<br>HARASSMENT | Defines degree of chemical concentration. |
| 6 | Numeric Entry | NUMBER OF BOMBS | 2 spaces to be filled in from Numeric pad. | Defines number of chemical bombs to be dropped during event. |
| 7 | List | AGENT | PERSISTENT NERVE<br>PERSISTENT BLISTER<br>NONPERSISTENT NERVE<br>NONPERSISTENT BLOOD | Specifies type of agent being employed. |
| 8 | Numeric Entry | WIND SPEED | 3 spaces to be filled in from Numeric pad. | Specifies the wind speed in KM/HR (maximum is 120). Default set to 20 KM/HR. |
| 9 | Numeric Entry | WIND DIRECTION | 3 spaces to be filled in from Numeric pad. | Specifies wind direction in degrees. Valid range 1 to 360. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 10 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 11 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 12 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 13 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM values.) | Specifies execution date and time of chemical mission. |
| 14 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF EDIT CHEMICAL MISSION: | | | | |
| 3 | List | CHEMICAL MISSION | List of chemical missions previously defined. | Defines selection of chemical mission to be updated or modified. Missions shall be identified by time, target, delivery method and chemical agent. NOTE: Upon selection of mission, all parameters describing the chemical mission are displayed for review. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 10 | Numeric Entry | TEMPERATURE | 2 spaces to be filled in from Numeric pad. | Specifies the air temperature in degrees Centigrade (valid range -27 to 127). |
| 11 | List | TEMPERATURE GRADIENT | NEUTRAL<br>STABLE<br>UNSTABLE | Specifies air stability. Default set to neutral. |
| 12 | List | PRECIPITATION | CLEAR<br>RAIN | Specifies whether or not it is raining. |
| 13 | Alpha/ Numeric Entry | MISSION DATE/TIME | DDMMMYY<br>__:__(Current date displayed for edit (if required) followed by 4 spaces to be filled in with HH:MM values.) | Specifies execution date and time of chemical mission. |
| 14 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF EDIT CHEMICAL MISSION: | | | | |
| 3 | List | CHEMICAL MISSION | List of chemical missions previously defined. | Defines selection of chemical mission to be updated or modified. Missions shall be identified by time, target, delivery method and chemical agent. NOTE: Upon selection of mission, all parameters describing the chemical mission are displayed for review. |

Figure 16. Menu: Chemical event definition (continued).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 4 | List | SELECT PARAMETER FOR EDIT | List of chemical mission paramenters which are available for edit. | Allows operator to update/ modify chemical mission entries. |
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF CANCEL CHEMICAL MISSION: | | | | |
| 3 | List | CHEMICAL MISSION | List of chemical missions previously defined. | Defines selection of chemical mission to be cancelled. Missions shall be identified by time, target and chemical agent. |
| 4 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 16. Menu: Chemical event definition (concluded).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | FORCE | BLUEFOR<br>OPFOR | Defines menu display options. |
| 2 | List | UNIT | List of leaf units identified in the system data base in accordance with FORCE selected above. | Specifies unit for which effects are being entered. |
| 3 | List | CASUALTIES - INDIVIDUAL PLAYERS | List of individual player casualties resulting from control gun firing events and operator entered nuclear player kills. | Defines selection of specific player casualties to be attributed to nuclear event. |
| 4 | List | POSTURE | IN THE OPEN<br>IN AN APC<br>IN A TANK<br>IN A WHEELED VEHICLE<br>IN A FOXHOLE<br>IN AN EARTH SHELTER | Allows operator to specify posture for which personnel casualties are to be attributed to nuclear event. Input is optional. |
| 5 | Numeric Entry | EXERCISE PERSONNEL CASUALTIES | 2 spaces to be filled in from Numeric pad. | Specifies the number of personnel casualties to be attributed to nuclear event. Upon entry, the operator shall again be prompted for posture. |
| 6 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 17. Menu: Nuclear mission result.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | FORCE | BLUEFOR<br>OPFOR | Defines menu display options. |
| 2 | List | UNIT | List of leaf units identified in the system data base in accordance with FORCE selected. | Specifies unit for which effects are being entered. |
| 3 | List | MOPP/POSTURE CATEGORIES | MOPP 0 : OPEN<br>MOPP 0 : PROTECTED<br>MOPP 0 : COVERED<br>MOPP 1 : OPEN<br>MOPP 1 : PROTECTED<br>MOPP 1 : COVERED<br>MOPP 2 : OPEN<br>MOPP 2 : PROTECTED<br>MOPP 2 : COVERED<br>MOPP 3 : OPEN<br>MOPP 3 : PROTECTED<br>MOPP 3 : COVERED<br>MOPP 4 : OPEN<br>MOPP 4 : PROTECTED<br>MOPP 4 : COVERED<br>MOPP 5 : OPEN<br>MOPP 5 : PROTECTED<br>MOPP 5 : COVERED | Specifies MOPP and posture category for which the number of personnel casualties are to be attributed to the chemical event. Input is optional. |
| 4 | Numeric Entry | EXERCISE PERSONNEL CASUALTIES | 2 spaces to be filled in from Numeric pad. | Specifies the number of personnel casualties to be attributed to chemical event for the selected MOPP/Posture category. Upon entry, the operator shall again be prompted for MOPP/Posture category. |
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 18. Menu: Chemical mission result.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | FORCE | BLUEFOR<br>OPFOR | Defines menu display options. |
| 2 | List | TYPE | NUCLEAR<br>CHEMICAL | Defines type of decontamination. |
| IF NUCLEAR: | | | | |
| 3 | List | LEVEL | PLAYER<br>UNIT | Defines menu display options. |
| IF PLAYER: | | | | |
| 4 | List | PLAYER | List of nuclear contaminated players in accordance with FORCE and TYPE selected above. | Specifies player that was decontaminated. |
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF UNIT: | | | | |
| 4 | List | UNIT | List of units in accordance with FORCE selected. | Specifies unit that was decontaminated. |
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF CHEMICAL: | | | | |
| 3 | List | UNIT | List of units in accordance with FORCE selected. | Specifies unit that was decontaminated. |
| 4 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 19. Menu: Decontamination.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | FORCE | BLUEFOR<br>OPFOR | Defines menu display option. |
| 2 | List | LEVEL | PLAYER<br>UNIT | Defines menu display options. |
| IF PLAYER: | | | | |
| 3 | List | PLAYER | List of all players identified in the system data base in accordance with FORCE selected above. | Specifies player for which posture is to be changed. Multiple selections may be made. |
| 4 | List | POSTURE | IN THE OPEN<br>IN AN APC<br>IN A TANK<br>IN A WHEELED VEHICLE<br>IN A FOXHOLE<br>IN AN EARTH SHELTER | Specifies posture to be used by the model for specified player. |
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF UNIT: | | | | |
| 3 | List | UNIT | List of all leaf units identified in the system data base in accordance with FORCE selected above. | Specifies unit for which posture is to be changed. |
| 4 | List | POSTURE | IN THE OPEN<br>IN AN APC<br>IN A TANK<br>IN A WHEELED VEHICLE<br>IN A FOXHOLE<br>IN AN EARTH SHELTER | Specifies posture to be used by the model for each player in the specified unit. |

Figure 20. Menu: Player unit posture.

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 5 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 20. Menu: Player unit posture (concluded).

| DISPLAY GROUP | TYPE | TITLE | CONTENT | DESCRIPTION |
|---|---|---|---|---|
| 1 | List | ACTION | ASSIGN CHEMICAL ALARM<br>DEASSIGN CHEMICAL ALARM | Defines action to be performed. |
| IF ASSIGN CHEMICAL ALARM: | | | | |
| 2 | List | FORCE | BLUEFOR<br>OPFOR | Defines menu display options. |
| 3 | List | PLAYER ASSOCIATED WITH ALARM | List of all players identified in the system data base in accordance with FORCE selected. | Defines player associated with the chemical alarm. Mobil alarms are normally associated with instrumented players and stationary alarms with uninstrumented players. |
| 4 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |
| IF DEASSIGN CHEMICAL ALARM: | | | | |
| 2 | List | FORCE | BLUEFOR<br>OPFOR | Defines menu display options. |
| 3 | List | ASSOCIATED PLAYER TO DEASSIGN | List of all players associated with chemical alarms of the FORCE selected above. | Specifies players to be deassigned as chemical alarms. More than one entry may be selected. |
| 4 | List | --- --- | IGNORE<br>REPEAT<br>DONE | Specifies manner of entry completion. |

Figure 21. Menu: Chemical alarm assignment.

DISCONNECTED ANTENNAE [NNN%] SHIELDED [NNN%]

- Cumulative Nuclear Effects Casualty Recommendation

  [Time] : [Unit] : ACCUMULATED EFFECTS PARTICIPANT CASUALTIES : OPEN [NNN%/NNN%] APC [NNN%/NNN%] TNK [NNN%/NNN%] WHEELED VEHICLE [NNN%/NNN%] FOXHOLE [NNN%/NNN%] EARTH SHELTER [NNN%/NNN%] PLAYER KILLS : [Player ID]; [Player ID] . . .

- Chemical Event Warning

  [Time] : [Force] : CHEMICAL EVENT SCHEDULED TO OCCUR AT [Time of Event] : [Location] : [Agent]

- Chemical Event Cancellation

  [Time] : CHEMICAL EVENT : [Event ID] : CANCELLED

- Chemical Alarm Recommendation

  [Time] : CHEMICAL ALARM [Alarm ID] IN CONTAMINATED AREA : ACTIVATE ALARM

- Unit in a Contaminated Area

  [Time] : [Unit] : [Player ID], [Player ID], [Player ID] .. [Player ID] ENTERED CHEMICALLY CONTAMINATED AREA

- Chemical Effects Casualty Recommendation

  [Time] : [Unit] : PERSONNEL CASUALTIES :
  MOPP0 : OPEN [NNN/NNN%] PROT [NNN/NNN%] COVER [NNN/NNN%]
  MOPP1 : OPEN [NNN/NNN%] PROT [NNN/NNN%] COVER [NNN/NNN%]
  MOPP2 : OPEN [NNN/NNN%] PROT [NNN/NNN%] COVER [NNN/NNN%]
  MOPP3 : OPEN [NNN/NNN%] PROT [NNN/NNN%] COVER [NNN/NNN%]
  MOPP4 : OPEN [NNN/NNN%] PROT [NNN/NNN%] COVER [NNN/NNN%]
  MOPP5 : OPEN [NNN/NNN%] PROT [NNN/NNN%] COVER [NNN/NNN%]

3.3.2.3 Reports - The CIS shall provide the following new operator selectable reports at the support display during an NBC exercise segment:

- Nuclear Event Log
- Nuclear Casualty Log
- Accumulated Radiation Report
- Chemical Event Log

- Chemical Casualty Log
- Chemical Contamination Report

The format of each display is detailed in paragraphs 3.2.2.8 and 3.2.3.7.

3.3.2.4 Graphical Displays - The IDCC shall provide the Radiation Dose Rate Over Time graphical display at the support display during an NBC exercise segment. The format of this display is detailed in paragraph 3.2.2.8.4.

ATTACHMENT 1

NUCLEAR ALGORITHMS

The figures in this appendix describe the algorithms used for calculating the nuclear environment in the NTC nuclear model. A description of each algorithm has been included along with a description of the constants and variables used in the equations. Also included in this section are figures which describe the values used for player protection factors and the values used for calculating the probability of casualty.

Figure 22 - Prompt Effects Algorithms
Figure 23 - Casualty Computation Algorithms
Figure 24 - Player Protection Factors
Figure 25 - Values used for Calculating Probability of Casualty

For more detailed information on the NTC nuclear algorithms refer to the "Report on the Selection of Algorithms for the NTC Nuclear Model", dated 9 September 1983.

| EFFECT | ALGORITHM | VARIABLES | CONSTANTS |
|---|---|---|---|
| PROMPT RADIATION DOSE | DOSE (RADS) = $A_1 Y^{A_2} R^{A_3} e^{A_4 R}$ | Y = YIELD IN KILOTONS<br>R = GROUND RANGE IN KMS | $A_1$ = 8528<br>$A_2$ = 1<br>$A_3$ = -2.485<br>$A_4$ = -3.572 |
| PEAK OVERPRESSURE | OVERPRESSURE (PSI) = $A_1 Y^{A_2} R^{A_3}$ | Y = YIELD IN KILOTONS<br>R = GROUND RANGE IN KMS | $A_1$ = 1.61<br>$A_2$ = 0.567<br>$A_3$ = -1.7 |
| DYNAMIC PRESSURE IMPULSE | IMPULSE (PSI -SEC) = $A_1 Y^{A_2} R^{A_3}$ | Y = YIELD IN KILOTONS<br>R = GROUND RANGE IN KMS | $A_1$ = $9.88 \times 10^{-3}$<br>$A_2$ = 1.146<br>$A_3$ = -2.44 |
| EMP PEAK VERTICAL FIELD STRENGTH | EMP (V/M) = $A_1 Y^{A_2} R^{A_3}$ | Y = YIELD IN KILOTONS<br>R = GROUND RANGE IN KMS | $A_1$ = $1.39 \times 10^4$<br>$A_2$ = 0.215<br>$A_3$ = -1.28 |
| THERMAL RADIATION FLUENCE | FLUENCE (CAL/CM$^2$) = $A_1 Y^{A_2} R^{A_3} e^{A_4 R V_0/V}$ | Y = YIELD IN KILOTONS<br>R = SLANT RANGE IN KMS<br>V = CURRENT VISIBILITY IN KMS (DEFAULT = 20) | $A_1$ = 2.88<br>$A_2$ = 1<br>$A_3$ = -1.99<br>$A_4$ = -0.116<br>$V_0$ = BASE VISIBILITY = 45 KILOMETERS |

Figure 22. Prompt effects algorithms.

| EFFECT | ALGORITHM | VARIABLES | CONSTANTS |
|---|---|---|---|
| EVENTUAL UNIT LOSSES DUE TO NUCLEAR RADIATION | $PCT = A_0 + A_1D + A_2D^2 + A_3D^3 + A_4D^4$ | PCT = TOTAL PERCENT CASUALTIES (INCLUDING IMMEDIATE)<br>D = TOTAL ACCUMULATED RADIATION DOSE ($110 < D < 630$) | $A_0 = 39.9244$<br>$A_1 = -0.824663$<br>$A_2 = 5.30682 \times 10^{-3}$<br>$A_3 = -1.00899 \times 10^{-5}$<br>$A_4 = 6.31946 \times 10^{-9}$ |
| TIME DELAY BEFORE CASUALTY ASSESSMENT | $T_1 = A/(1 + D)$ | $T_1$ = TIME DELAY IN HOURS AFTER RECEIVING DOSE<br>D = TOTAL DOSE RECEIVED IN RADS (> 99) | A = 600 |
| LONG TERM TIME DELAY FOR ULTIMATE CASUALTY ASSESSMENT | $T_2 = B/(1 + D)$ | $T_2$ = ULTIMATE TIME OF CASUALTY (HOURS)<br>D = TOTAL DOSE RECEIVED IN RADS (> 99) | B = 125,000 |
| INDIVIDUAL PROBABILITY OF KILL (CALCULATED FOR EACH EFFECT) | $P_K = 0.5 + (I - I_{50})\, I_{SL}$ | $P_K$ = PROBABILITY OF CASUALTY FROM EFFECT<br>I = ENVIRONMENT LEVEL<br>$I_{50}$ = ENVIRONMENT REQUIRED FOR 50% CASUALTY<br>$I_{SL}$ = DEPENDENCE OF PROBABILITY ON INCREMENTAL CHANGE (SLOPE) | (SEE PARAGRAPH 4.3 OF "REPORT ON THE SELECTION OF ALGORITHMS FOR THE NTC NUCLEAR MODEL", 9 SEPT 1983) |
| COMBINED EFFECTS PROBABILITY OF KILL | $P_{K_T} = 1 - (1-P_{K_1})(1-P_{K_2})\ldots(1-P_{K_n})$ | $P_{KT}$ = COMBINED PROBABILITY<br>$P_{K_1}, P_{K_2}, P_{K_n}$ = INDIVIDUAL PROBABILITIES | NONE |

Figure 23. Casualty computation algorithms.

| | IMMEDIATE | FALLOUT |
|---|---|---|
| OPEN | 1 | 1 |
| APC | 2 | 3 |
| TANK | 3 | 20 |
| WHL VEH | 1.3 | 1.7 |
| FOXHOLE | 3 | 10 |
| SHELTER | 7 | 100 |

Figure 24. Player protection factors.

| | ENVIRONMENT REQUIRED FOR 50% CASUALTY | DEPENDENCE OF PROBABILITY ON INCREMENTAL CHANGE |
|---|---|---|
| Nuclear Radiation (rads) | 530 | 0.0013 |
| Thermal Radiation (cal/cm ): | | |
| In the open | 8/25** | 0.1/.05** |
| In a foxhole | 40/500** | 0.02/.0025** |
| Overpressure (psi): | | |
| In the open | 4 | 0.15 |
| In a foxhole | 21 | 0.05 |
| In a bunker | 100 | 0.01 |
| Dynamic Impulse* (psi-sec): | | |
| In an APC | 1.06 | 1.0 |
| In a tank | 0.65 | 1.0 |
| In a truck | 0.16 | 4.0 |
| EMP (V/M): | | |
| In use | $6 \times 10^{3}_{4}$ | $2 \times 10^{-4}_{-4}$ |
| Off | $1 \times 10^{4}_{4}$ | $2 \times 10^{-4}_{-4}$ |
| Antenna disconnected | $2 \times 10^{5}_{5}$ | $2 \times 10^{-4}_{-4}$ |
| Packed & shielded | $1 \times 10^{5}$ | $2 \times 10^{-4}$ |

*The casualty computation for blast effects on vehicles was changed from the original equations, as defined in previous documentation, to use dynamic impulse values rather than peak overpressure for APCs, tanks and trucks. These values are preliminary estimates only; no attempt has been made to make minor adjustments to the values.

**These constants were used in the calculations to represent men wearing protective chemical overgarments.

Figure 25. Values used for calculating probability of casualty.

ATTACHMENT 2

CHEMICAL ALGORITHMS

The figures in this Appendix describe the algorithms used for calculating the chemical environment in the NTC chemical model. A description of each algorithm has been included along with a description of the constants and variables used in the equations.

| HAZARD PREDICTION | |
|---|---|
| PROPERTIES | ALGORITHM |
| Hazard Graphics Display | Algorithm is identical to NATO Report Analysis Report ATP-45, Part IV, Chapter 12 |

Figure 26. Hazard prediction algorithm.

| NON-PERSISTENT CLOUD | | |
|---|---|---|
| PROPERTIES | ALGORITHM | VARIABLES/CONSTANTS |
| Total Airborne Material | $Q = N \quad Q_0 \; f \; C_{pmg}$<br>$f = 1.0$ Agent = AC<br>$f = f_0 + f_1 T + f_2 T^2$<br>Agent = GB | $Q_0$ = fill weight of round (lb)<br>N= Number of rounds<br>Cpmg=453592.37<br>T = Temperature<br>$f_0 = 0.414337$<br>$f_1 = 0.002096$<br>$f = 1.814 \times 10^{-5}$ |
| Initial Cloud Size | $Sigao = R_0/1.5$<br>$Sigzo = h_0/1.5$ | $R_0$ = Target Radius<br>$h_0$ = Vertical Size From Table |
| Point Source Location | $D_a = D_0 \; (Sigao/Sigx100)^{(1/ALPHA)}$<br>$D_z = D_0 \; (Sigz0/Sigz100)^{(1/BETA)}$ | alpha = Table Lookup<br>beta = Table Lookup<br>Sigz100 = Table Lookup<br>above are stability dependent<br>Sigx100 = 3.41<br>$D_0$ = 100 |
| |  <br>x = EAST<br>y = NORTH<br>Ow measured clockwise from North | |
| Cloud Center | $X_C = X_0 + V_W \; \Delta t \sin(\theta_W)$<br>$Y_C = Y_0 + V_W \; \Delta t \cos(\theta_W)$ | $X_0, Y_0$ = Attack Center<br>$V_W$ = Wind Speed<br>$\theta_W$ = Wind Direction<br>$\Delta t$ = Time Since Attack |
| Distance Travelled | $D = V_W \; \Delta t$ | |
| Cloud Growth | $Siga = Sigx100 \; ((D_a+D)/D_0)^{alpha}$<br>$Sigz = Sigz100 \; ((D_z+D)/D_0)^{beta}$ | |

Figure 27. Nonpersistent cloud algorithms.

| NONPERSISTENT CLOUD (continued) | | |
|---|---|---|
| **PROPERTIES** | **ALGORITHM** | **VARIABLES/CONSTANTS** |
| Cloud Concentrations:<br>center<br>at point X,Y<br><br>Graphics Display<br>Circle center at $X_c$, $Y_c$<br>Circle Radius | $C_c = 2Q/ ((2\pi)^{3/2} Siga^2 Sigz)$<br>$C = C_c \exp(-\frac{1}{2}(R/Siga)^2)$<br><br>$A_t = Siga (-2 \ln (c_d/cc))$<br>if $C_c > C_d$<br>$A_t = 0$ if $C_c \leq C_d$ | R = Distance from cloud center<br>$R^2 = (x-x_c)^2 + (Y-Y_c)^2$<br><br>Cd = Agent Dependent Alarm Trigger Concentration |



Figure 27. Nonpersistent cloud algorithms (continued).

PERSISTENT CLOUD

| PROPERTIES | ALGORITHM | VARIABLES/CONSTANTS |
|---|---|---|
| Material In Cloud | $Q = N\ Q_0\ C_{pmg}$ | $Q_0$ = Full Weight (lb)<br>N = Number of Rounds<br>$C_{pmg}$ = 453592.37 mgm/lb |
| Initial Cloud Size<br>Point Source Locations<br>Distance Travelled<br>Cloude Center Location<br>Cloud Concentration<br>Cloud Graphics Display | See Nonpersistent Algorithms | |
| Cloud Height | | |
| Initial | $Z_{0T} = Z_{0B} = 100$ m Aircraft Spray<br>$Z_{0J} = Z_0 = 0$<br>$Z_{0T} = Sig Z_0/2$ All Others | |
| Current | $Z_C = Z_0 - V_{f0}\ \Delta t$<br>$Z_T = Z_{0T} - V_{fT}\ \Delta t$<br>$Z_B = Z_{0B} - V_{fB}\ \Delta t$ | $V_{f0}$ = Rate of Fall of Mean Droplet Size (Agent Dependent)<br>$V_{fT}$ = Rate of Fall of Smallest Droplets<br>$V_{fB}$ = Rate of Fall of Largest Droplets |
| Cloud Growth | $Siga = Sigx100\ (\ (D_A + D)/D_0\ )^{alpha}$<br>$Sigz = Sigz_0 + (V_{fB} - V_{fT})\ \Delta t/3$ | D, $D_A$, $D_0$, alpha See Nonpersistent Algorithms |
| Ground Contact | $t_T$ = Time Top Touches Ground ($Z_T = 0$)<br>$t_B$ = Time Bottom Touches Ground ($Z_B = 0$)<br>No Cloud After $t_T$ | |

Figure 28. Persistent cloud algorithms.

## PERSISTENT GROUND CONTAMINATION

| | | |
|---|---|---|
| Case #1 | $t < t_B \quad (Z_B > 0)$ | No Ground Contamination |
| Case #2 | $t \geq t_T \quad (Z_T \leq 0)$ | No Cloud Present |
| Case #3 | $t_B \leq t < t_T \quad (Z_B \leq 0, Z_T > 0)$ | Cloud And Ground Contamination |
| | CASE #1<br>No computation needed | |
| PROPERTIES | CASE #2<br>ALGORITHM | VARIABLES/CONSTANTS |
| Ellipse Center | $X_{EC} = (X_B + X_T)/2$<br>$Y_{EC} = (Y_B + Y_T)/2$ | $X_B, Y_B$ = Location Bottom Touches Ground<br>$X_T, Y_T$ = Location Top Touches Ground |
| | $X_B = X_0 + V_W (t_B - t_0) \sin \theta_W$<br>$Y_B = Y_0 + V_W (t_B - t_0) \cos \theta_W$<br>$X_T = X_0 + V_W (t_T - t_0) \sin \theta_W$<br>$Y_T = Y_0 + V_W (t_T - t_0) \cos \theta_W$ | $t_0$ = Time of Attack<br>$V_W, \theta_W$ = As Defined Previously<br>$t_T, t_B$ = Defined Previously |
| Ellipse Orientation | $\phi = \theta_W$ | |
| Ellipse Parameters | Sigga = (Sigab + Sigat)/2 | Sigab = Cloud Sigma at Time $t_B$<br>Sigat = Cloud Sigma at Time $T_T$ |
| Semimajor Axis | $a_{GEL} = 1.5 \text{ Sigga} + \sqrt{(X_B - X_T)^2 + (Y_B - Y_T)^2}/2$ | |
| Semimajor Axis | $b_{GEL} = 1.5 \text{ Sigga}$ | |

Figure 29. Persistent ground contamination.

| CASE #2 (continued) | | |
|---|---|---|
| **PROPERTIES** | **ALGORITHM** | **VARIABLES/CONSTANTS** |
| HAZARD DISPLAY: | | |
| Downwind Limit Concentration | $C_{edge} = 0.2\ C_s\ S_f\ t_{fac}$ | |
| | $At_m = a_{GEL}\ (\ C_d\ /\ C_{edge}\ )^{(-1/1.13)}$ | $C_d$ = Alarm Trigger Concentration (Agent Dependent) |
| Semimajor Axis: | $At = (V_W\ (t-t_T) + Sigat + a_{GEL})\ /\ 2$ | |
| | if $A_{tm}$ is less than At as computed above, then: | $t_{fac}$, $S_f$, (defined on next page) |
| | $At = A_{tm}$ | |
| Semimajor Axis: | $Bt = b_{GEL}\ (\ A_t\ /\ a_{GEL}\ )$ | |
| Ellipse Orientation: | $\phi_H = \theta_W$ | |
| Ellipse Center: | $X_{HC} = X_{EC} + (At - a_{GEL}) \sin \phi_H$ | |
| | $Y_{HC} = Y_{EC} + (At - a_{GEL}) \cos \phi_H$ | |



Figure 29. Persistent ground contamination (continued).

CASE #2
(continued)

| PROPERTIES | ALGORITHM | VARIABLES/CONSTANTS |
|---|---|---|
| Concentration at Center | $C_{gc} = Q / ( 2\pi \, Sigga^2 )$ | $D_L$ = Distance Downwind from ground ellipse center $(X_{EC}, Y_{EC})$ |
| Vapor Concentration | $C_v = 0.2 \; C_s \; S_f \; ( (D_L + a_{GEL}) / (2 \, a_{GEL}) )^{V_{fac}} \; t_{fac}$ | |
| The Concentration is Zero Upwind of the Contamination and Further Downwind than the Wind has Carried it. | $C_v = 0$ if $D_L < -a_{GEL}$ or $D_L > V_w (t-t_T) + Sigat$ | |
| | $V_{fac} = -1.13$ if $a_{GEL} \leq D_L \leq V_w (t-t_T) + Sigat$ | (Past ground ellipse but close enough for vapor to have reached) |
| | $V_{fac} = 0.46$ $\quad -a_{GEL} \leq D_L < a_{GEL}$ | (Inside ground ellipse) |
| Surface Coverage factor | $S_f = 6 \times 10^{-5} \; Q / R_Q^2$ | $R_Q$ is the Attack Radius |
| Saturation Concentration | $C_s = C_{so} \left( \frac{298}{273 + T} \right) \exp \left( R_{HVAP} \left( \frac{1}{298} - \frac{1}{273 + T} \right) \right)$ | $R_{HVAP}$ is a reduced heat of vaporization (Agent Dependent) |
| | | $C_{so}$ is an agent dependent base concentration |
| Agent Dissipation | $t_{fac} = \exp ( -\Delta t / \tau )$ | $\tau$ = Decay Time |
| | $\tau = \tau_0 \left( \frac{C_{so}}{C_s} \right) / ( 1 + V_w )$ | $\tau_0$ = Agent Dependent Parameter |
| Concentration at a Unit Location | $C = C_v \; \exp \left( -1 \left( \frac{D_c}{Sigga} \right)^2 \right)$ | $D_c$ = Crosswind distance from ellipse center |

Figure 29. Persistent ground contamination (continued).

| CASE #3 | | |
|---|---|---|
| **PROPERTIES** | **ALGORITHM** | **VARIABLES/CONSTANTS** |
| Concentration at Unit Location: | | |
| Downwind of Cloud Center | Do as in Case #1 - Cloud Only | |
| Upwind of Cloud Center | Compute Cloud as in Case #1<br>Compute Ground Vapor as in Case #2<br>use Larger Value | |
| Graphics Display: | | |
| Semimajor Axis | $A_L = 1\ Siga\ (\sqrt{C_{fac}} + \sqrt{-2\ ln\ (C_d/C_B)}\ ) + 1\ \sqrt{(X_C - X_B)^2 + (Y_B - Y_C)^2}$ | $C_B = C_C$ computed at time $t = t_B$ |
| Semimajor Axis | $B_L = Sigb\ \sqrt{C_{fac}}$ | |
| | $C_{fac} = -2\ ln\ (C_d/C_C) - (Z_C/Sigz)^2$ | |
| Ellipse Center | See Case #2 | |

Figure 29. Persistent ground contamination (continued).

| CASUALTY COMPUTATIONS | | |
|---|---|---|
| PROPERTIES | ALGORITHM | VARIABLES/CONSTANTS |
| Dose Received<br>(For Each Agent) | $Dose = Dospr + \frac{1}{2}(C + C_{PR})(t - t_{PR})$<br>(if not AC) | Dospr = Previous time dose<br>C = Current concentration<br>$C_{PR}$ = Previous time concentration<br>t = Current time<br>$t_{PR}$ = Previous time<br>C and $C_{PR}$ are sums over all active missions using this agent |
| (For AC) | $Dose = \frac{1}{2}(C + C_{PR})$ | |
| Casualties<br>(by Agent) | If Dose is less than theshold Dose, casualty = 0 | $D_T$ = Threshold Dose |
| Effective Dose | $D_{EFF} = Dose \quad P_{jk}$ if $Dose \geq D_T$ | $P_{jk}$ = Effectiveness factor - Agent and posture dependent |
| Safety Time | $t_s = t_E + (1 - NE/4)\, t_s^o$ | $t_E$ = Time of exposure<br>NE = Number of exposures to AC<br>$t_s^o$ = Mopp / Agent value from table |
| Time of Casualty | $t_c = t_s + \Delta t_c$ For AC,GB<br>$t_{c1} = t_L + \Delta t_c \quad t < t_s$ For VX,HD<br>$t_{c2} = t_s + \Delta t_c \quad t \geq t_s$ | $\Delta t_c$ = Delay time (Agent Dependent) |

Figure 30. Casualty computation algorithms.

| CASUALTY COMPUTATIONS (continued) | | |
|---|---|---|
| **PROPERTIES** | **ALGORITHM** | **VARIABLES/CONSTANTS** |
| **Casualty Effectiveness** | | |
| Nonpersistent | $C_F = 1 - (1-C_F^0)(1 - NE/4)$ | $C_F^0$ = Mopp and Agent Dependent Table Lookup |
| Persistent | $C_F = 1 - (1 - C_F^0)(1 - NE/4)$ $t < t_{c2}$ | |
| | $C_F = 1$ $t \geq t_{c2}$ | |
| **Casualty Level (%) For Each Agent** | $CAS = 50\ (erf\ (DSG) + 1)$ | erf = Normal Error Function |
| | $DSG = PR_0/PR_j \log\ (C_F\ D_{EFF} / D_{50})$ | $PR_0$ = 0.3070925 |
| | | $PR_j$ = Agent Dependent Table Lookup |
| | | $D_{50}$ = 50% Lethality Level - Table Lookup |
| **Total Casualties** | $CASTOT = \sqrt{\Sigma(CAS)^2}$ | Sum over all agents |
| | CASTOT not less than 10% if any agent above threshold | |

Figure 30. Casualty computation algorithms (continued).

ATTACHMENT 3

## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ADA | Air Defense Artillery |
| APC | Armored Personnel Carrier |
| BLUEFOR | Blue Force |
| CC | Computational Component |
| CIS | Core Instrumentation Subsystem |
| EMC | Exercise Monitoring and Control |
| EMP | Electromagnetic Pulse |
| HOB | Height of Burst |
| ID | Identification |
| IDCC | Interactive Display and Control Component |
| KM | Kilometer |
| KT | Kiloton |
| MOPP | Mission Oriented Protective Posture |
| NBC | Nuclear, Biological and Chemical |
| NTC | National Training Center |
| OC | Observer Controller |
| PSI | Pounds per square inch |
| RDS | Requirements Design Specification |
| RS | Radiation Status |
| TAF | Training Analysis and Feedback |
| US | United States |

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